MITSUBISHI ELECTRIC

SPLIT-TYPE AIR CONDITIONERS

Revision F:
- Resistance value of the defrost heater for MUZ-FH25VEHZ-[E1], [E3], [E4], [ER1], [ER3], [ER4], [ET1], [ET2] and MUZ-FH35VEHZ-[E1], [E2], [ER1], [ER2], [ET1], [ET2] has been corrected (11-4.).

OBH625 REVISED EDITION-E is void.

OUTDOOR UNIT

SERVICE MANUAL

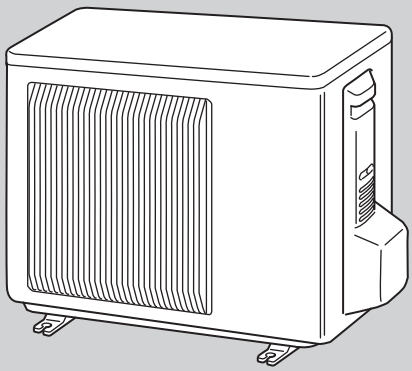
HFC utilized R410A

No. OBH625
REVISED EDITION-F

Models

MUZ-FH25VEHZ - [E1], [E3], [E4], [ER1], [ER3], [ER4], [ET1], [ET2]
MUZ-FH35VEHZ - [E1], [E2], [ER1], [ER2], [ET1], [ET2]
MUZ-FH50VEHZ - [E1], [E2], [ER1], [ER2], [ET1], [ET2]

Indoor unit service manual
MSZ-FH•VE Series (OBH623)



MUZ-FH25VEHZ
MUZ-FH35VEHZ

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PARTS CATALOG (OBB625)

NOTE:
RoHS compliant products have <G> mark on the spec name plate.

Use the specified refrigerant only

Never use any refrigerant other than that specified.

Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of.
Correct refrigerant is specified in the manuals and on the spec labels provided with our products.
We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions.

<Preparation before the repair service>

- Prepare the proper tools.
- Prepare the proper protectors.
- Provide adequate ventilation.
- After stopping the operation of the air conditioner, turn off the power-supply breaker and remove the power plug.
- Discharge the capacitor before the work involving the electric parts.

<Precautions during the repair service>

- Do not perform the work involving the electric parts with wet hands.
- Do not pour water into the electric parts.
- Do not touch the refrigerant.
- Do not touch the hot or cold areas in the refrigeration cycle.
- When the repair or the inspection of the circuit needs to be done without turning off the power, exercise great caution not to touch the live parts.

Revision A:
• MUZ-FH50VEHZ- E1 has been added.

Revision B:
• MUZ-FH25VEHZ-ER1, MUZ-FH25VEHZ-ER1 and MUZ-FH50VEHZ-ER1 have been added.

Revision C:
• MUZ-FH25VEHZ-E3 and MUZ-FH25VEHZ-ER3 have been added.

Revision D:
• MUZ-FH25VEHZ-ET1, MUZ-FH35VEHZ-ET1 and MUZ-FH50VEHZ-ET1 have been added.

Revision E:
• MUZ-FH25VEHZ-E4, ER4, ET2, MUZ-FH35VEHZ-E2, ER2, ET2 and MUZ-FH50VEHZ-E2, ER2, ET2 have been added.

Revision F:
• Resistance value of the defrost heater for MUZ-FH25VEHZ-E1, E3, E4, ER1, ER3,ER4, ET1, ET2 and MUZ-FH35VEHZ-E1, E2, ER1, ER2, ET1, ET2 has been corrected (11-4.).

1 TECHNICAL CHANGES

MUZ-FH25VEHZ -E1
MUZ-FH35VEHZ -E1
MUZ-FH50VEHZ -E1

1. New model

MUZ-FH25VEHZ -ER1
MUZ-FH35VEHZ -ER1
MUZ-FH50VEHZ -ER1

1. New model

MUZ-FH25VEHZ -E1 → MUZ-FH25VEHZ -E3

1. Inverter P.C. board has been changed.
2. Compressor has been changed.

MUZ-FH25VEHZ -ER1 → MUZ-FH25VEHZ -ER3

1. Inverter P.C. board has been changed.
2. Compressor has been changed.

MUZ-FH25VEHZ -ET1
MUZ-FH35VEHZ -ET1
MUZ-FH50VEHZ -ET1

1. New model

MUZ-FH25VEHZ -E3 → MUZ-FH25VEHZ -E4

1. Model name has been changed.
2. Compressor has been changed.

MUZ-FH35VEHZ -E1 → MUZ-FH35VEHZ -E2
MUZ-FH50VEHZ -E1 → MUZ-FH50VEHZ -E2

1. Model name has been changed.

MUZ-FH25VEHZ -ER3 → MUZ-FH25VEHZ -ER4

1. Model name has been changed.
2. Compressor has been changed.

MUZ-FH35VEHZ -ER1 → MUZ-FH35VEHZ -ER2
MUZ-FH50VEHZ -ER1 → MUZ-FH50VEHZ -ER2

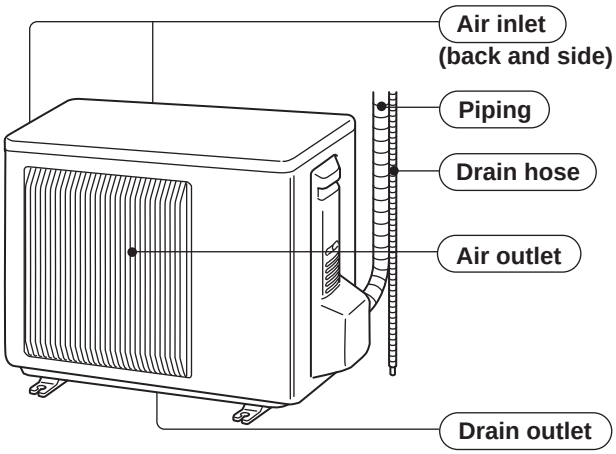
1. Model name has been changed.

MUZ-FH25VEHZ -ET1 → MUZ-FH25VEHZ -ET2
MUZ-FH35VEHZ -ET1 → MUZ-FH35VEHZ -ET2
MUZ-FH50VEHZ -ET1 → MUZ-FH50VEHZ -ET2

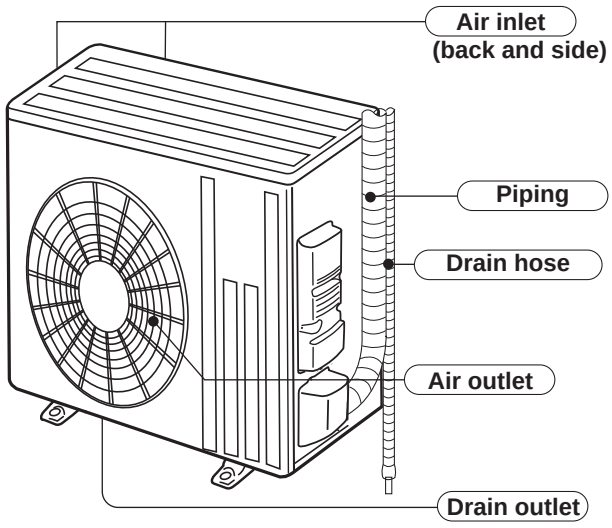
1. Model name has been changed.

2 PART NAMES AND FUNCTIONS

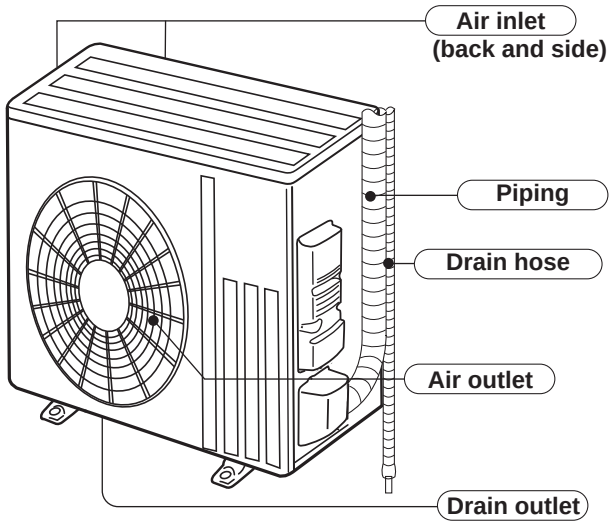
MUZ-FH25VEHZ
MUZ-FH35VEHZ



MUZ-FH50VEHZ -E1, ER1, ET1



MUZ-FH50VEHZ -E2, ER2, ET2



3 SPECIFICATION

Outdoor model					MUZ-FH25VEHZ	MUZ-FH35VEHZ
Power supply					Single phase, 230 V, 50 Hz	
Capacity Rated frequency (Min.-Max.)			Cooling	kW	2.5 (0.8 - 3.5)	3.5 (0.8 - 4.0)
			Heating		3.2 (1.0 - 6.3)	4.0 (1.0 - 6.6)
Breaker Capacity				A	10	12
Electrical data	Power input ✻1 (Set)		Cooling	W	485	820
			Heating		580	800
	Running current ✻1 (Set)		Cooling	A	2.6	3.9
			Heating		2.9	3.8
	Power factor ✻1 (Set)		Cooling	%	81	91
			Heating		86	91
	Starting current ✻1 (Set)			A	2.9	3.9
Coefficient of performance (COP) ✻1 (Set)			Cooling		5.15	4.27
			Heating		5.52	5.00
Compressor	Model				E1, E4, ER1, ER4, ET1, ET2	SNB140FRUMT
					E3, ER3	SNB130FGAMT
	Output			W	E1, E4, ER1, ER4, ET1, ET2	950
					E3, ER3	900
	Current ✻1		Cooling	A	2.04	3.32
			Heating		2.34	3.22
	Refrigeration oil (Model)			L	0.35 (FV50S)	
Fan motor	Model				RC0J50-CI	
	Current ✻1		Cooling	A	0.28	0.30
			Heating		0.28	0.30
Dimensions W × H × D				mm	800 × 550 × 285	
Weight				kg	37	
Special remarks	Dehumidification		Cooling	L/h	0.2	0.8
	Air flow ✻1	Cooling	High	m^3/h	1,806	
			Low		1,038	
		Heating	High		2,016	
			Med.		1,710	
			Low		1,326	
	Sound level ✻1	Cooling		dB(A)	46	49
		Heating			49	50
	Fan speed	Cooling	High	rpm	810	
			Low		490	
		Heating	High		900	
			Med.		770	
			Low		610	
	Fan speed regulator				3	
	Refrigerant filling capacity (R410A)			kg	1.15	

NOTE: Test conditions are based on ISO 5151.

Cooling: Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
Outdoor Dry-bulb temperature 35°C
Heating: Indoor Dry-bulb temperature 20°C
Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C
Refrigerant piping length (one way): 5 m
✻1 Measured under rated operating frequency.

Outdoor model					**MUZ-FH50VEHZ**
Power supply					Single phase, 230 V, 50 Hz
Capacity Rated frequency (Min. - Max.)			Cooling	kW	5.0 (1.9 - 6.0)
			Heating		6.0 (1.7 - 6.8)
Breaker Capacity				A	16
Electrical data	Power input ✻1 (Set)		Cooling	W	1,380
			Heating		1,480
	Running current ✻1 (Set)		Cooling	A	6.1
			Heating		6.5
	Power factor ✻1 (Set)		Cooling	%	98
			Heating		98
	Starting current ✻1 (Set)			A	6.5
Coefficient of performance (COP) ✻1 (Set)			Cooling		3.62
			Heating		4.05
Compressor	Model				SNB172FEKMT
	Output			W	1,200
	Current ✻1		Cooling	A	4.98
			Heating		5.37
	Refrigeration oil (Model)			L	0.40 (FV50S)
Fan motor	Model				RC0J60-BC
	Current ✻1		Cooling	A	0.83
			Heating		0.84
Dimensions W × H × D				mm	840 × 880 × 330
Weight				kg	55
Special remarks	Dehumidification			Cooling	L/h	2.0
	Air flow ✻1	Cooling	High	m^3/h	3,006
			Med.		3,006
			Low		1,626
		Heating	High		2,892
			Med.		2,892
			Low		2,280
	Sound level ✻1			Cooling	dB(A)	51
				Heating		54
	Fan speed	Cooling	High	rpm	840
			Med.		840
			Low		480
		Heating	High		810
			Med.		810
			Low		650
	Fan speed regulator				3
	Refrigerant filling capacity (R410A)			kg	1.55

NOTE: Test conditions are based on ISO 5151.

Cooling: Indoor Dry-bulb temperature 27°C Wet-bulb temperature 19°C
Outdoor Dry-bulb temperature 35°C
Heating: Indoor Dry-bulb temperature 20°C
Outdoor Dry-bulb temperature 7°C Wet-bulb temperature 6°C
Refrigerant piping length (one way): 5 m
✻1 Measured under rated operating frequency.

Specifications and rated conditions of main electric parts

Item \ Model		MUZ-FH25VEHZ	MUZ-FH35VEHZ
Smoothing capacitor	(C61, C62)	600 µF/ 620 µF 420 V	
Diode module	(DB61)	15 A 600 V	
Fuse	(F61)	T20AL250V	
	(F701, F801, F901)	T3.15AL250V	
Defrost heater	(H)	230 V 130 W	
Power module	(IC700)	15 A 600 V	
	(IC932)	8A600V	
Expansion valve coil	(LEV)	12 VDC	
Reactor	(L61)	23 mH	
Power factor controller	(IC820)	20A 600V	
Circuit protection	(PTC64, PTC65)	33 Ω	
Terminal block	(TB)	5 P	
Relay	(X63)	3 A 250 V	
	(X64)	20 A 250 V	
	(X66)	3 A 250 V	
	(X69)	10A 230V	
R.V. coil	(21S4)	220 - 240 V AC	
Heater protector	(26H)	Open 45°C	

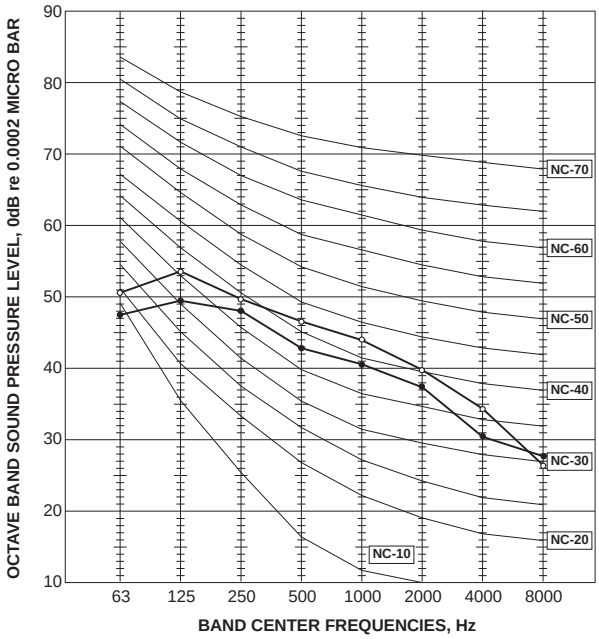
Specifications and rated conditions of main electric parts

Item \ Model		MUZ-FH50VEHZ
Smoothing capacitor	(CB1, CB2, CB3)	560 µF 450 V
Fuse	(F601, F880, F901)	T3.15AL250 V
Defrost heater	(H)	230 V 120 W
IGBT module	(IC932)	5 A 600 V
	(IC700)	20 A 600 V
Expansion valve coil	(LEV)	12 VDC
Reactor	(L)	340 µH
Diode module	(IC820)	20 A 600 V
Circuit protection	(PTC64, PTC65)	33 Ω
Terminal block	(TB1, TB2)	3 P
Relay	(X64)	20 A 250 V
	(X65)	20 A 250 V
	(X69)	10 A 250 V
	(X601)	3 A 250 V
	(X602)	3 A 250 V
R.V. coil	(21S4)	220 - 240 V AC
Heater protector	(26H)	Open 45 °C

4 NOISE CRITERIA CURVES

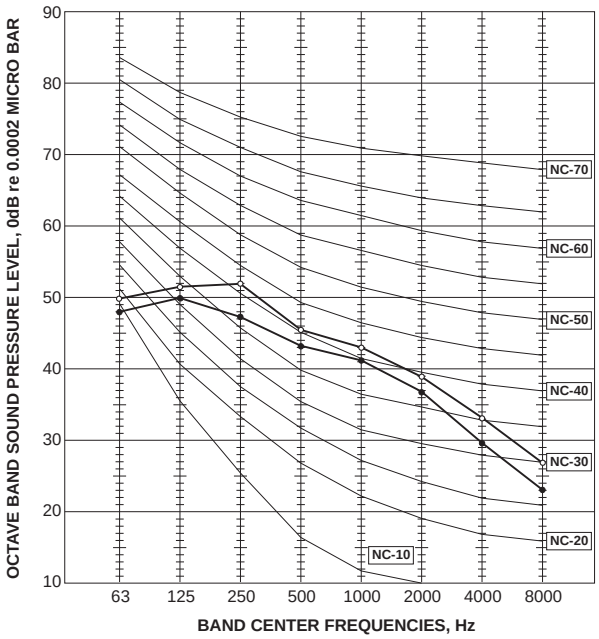
MUZ-FH25VEHZ - E1, E4, ER1, ER4, ET1, ET2

FUNCTION	SPL(dB(A))	LINE
COOLING	46	●—●
HEATING	49	○—○



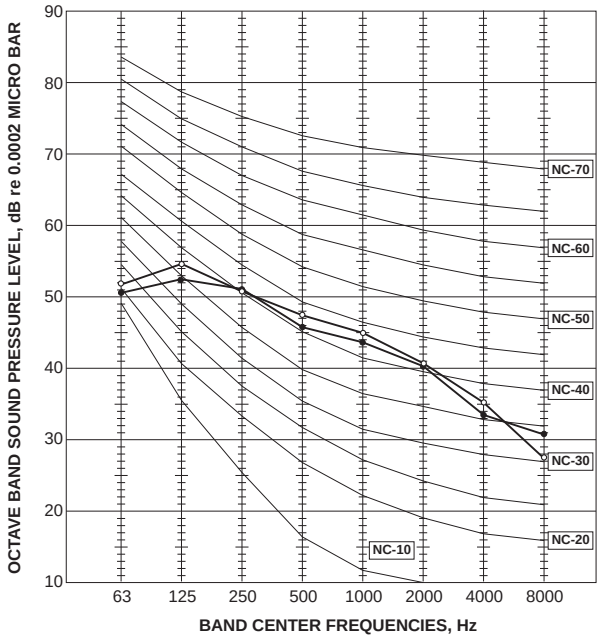
MUZ-FH25VEHZ - E3, ER3

FUNCTION	SPL(dB(A))	LINE
COOLING	46	●—●
HEATING	49	○—○



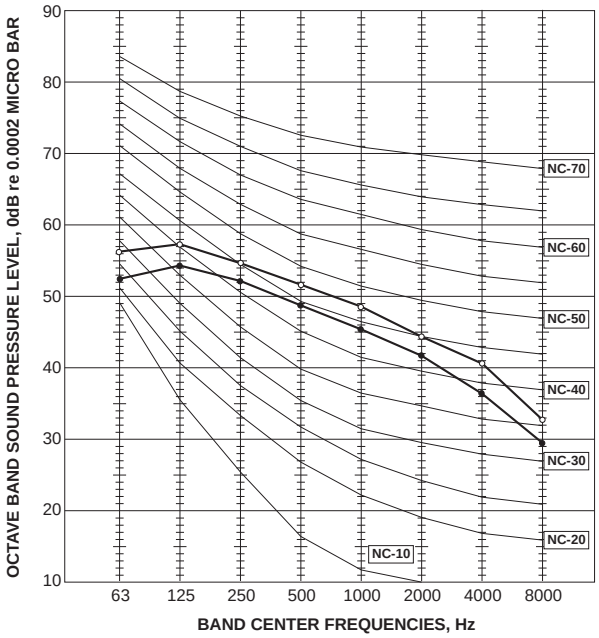
MUZ-FH35VEHZ

FUNCTION	SPL(dB(A))	LINE
COOLING	49	●—●
HEATING	50	○—○



MUZ-FH50VEHZ

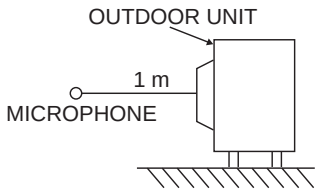
FUNCTION	SPL(dB(A))	LINE
COOLING	51	●—●
HEATING	54	○—○



Test conditions

Cooling: Dry-bulb temperature 35°C

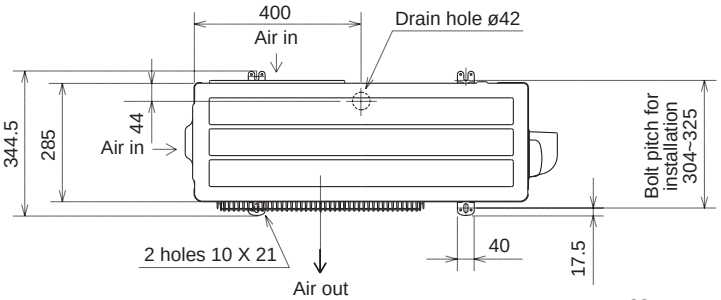
Heating: Dry-bulb temperature 7°C Wet-bulb temperature 6°C



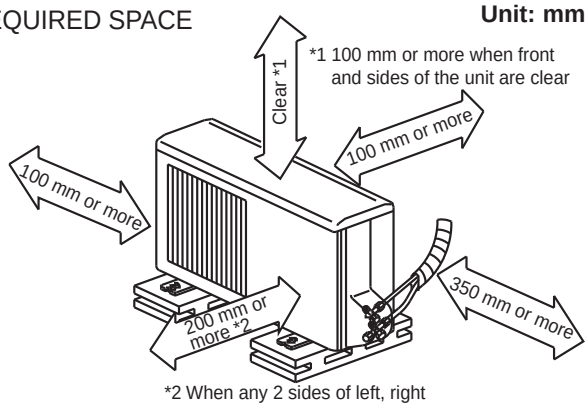
5 OUTLINES AND DIMENSIONS

MUZ-FH25VEHZ
MUZ-FH35VEHZ

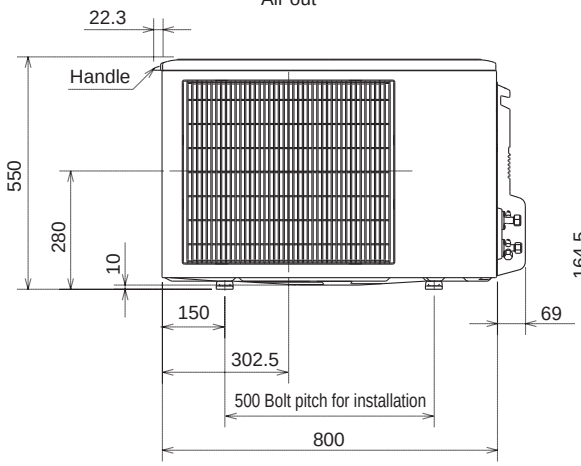
Unit: mm

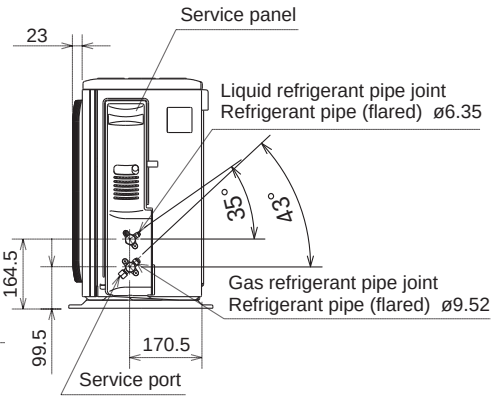


REQUIRED SPACE

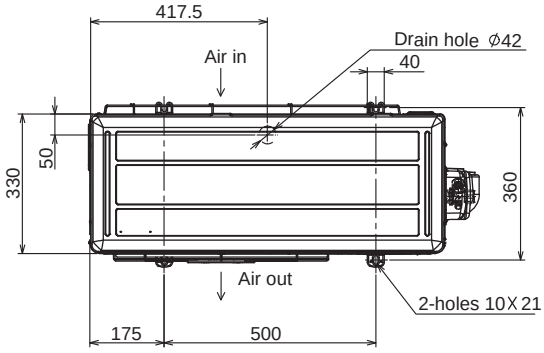


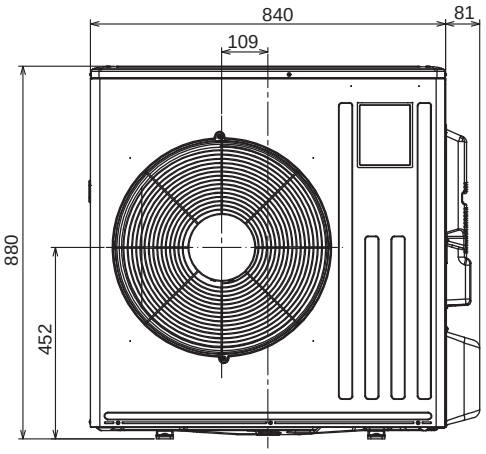
*2 When any 2 sides of left, right and rear of the unit are clear



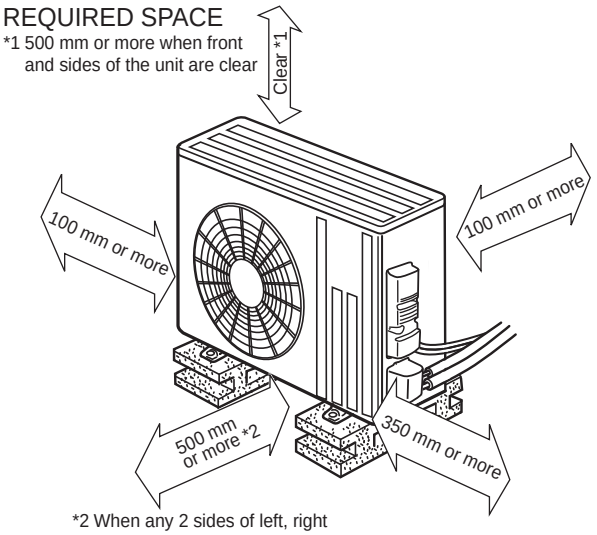


MUZ-FH50VEHZ - E1, ER1, ET1

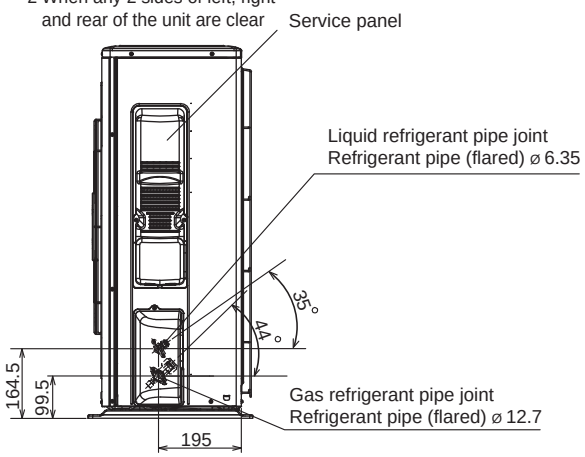




REQUIRED SPACE

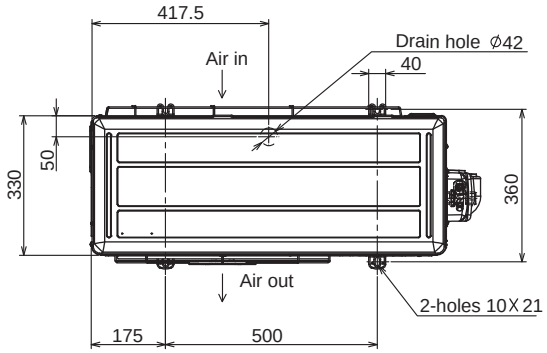


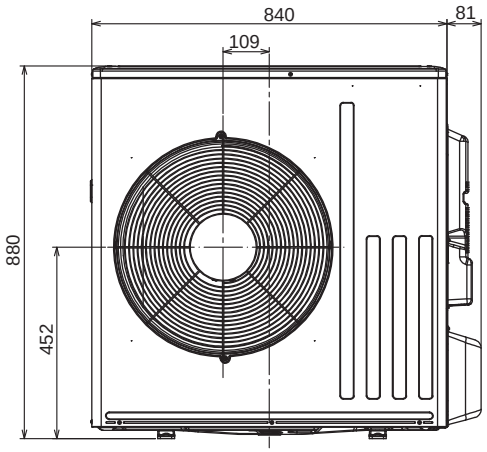
*2 When any 2 sides of left, right and rear of the unit are clear



MUZ-FH50VEHZ - E2, ER2, ET2

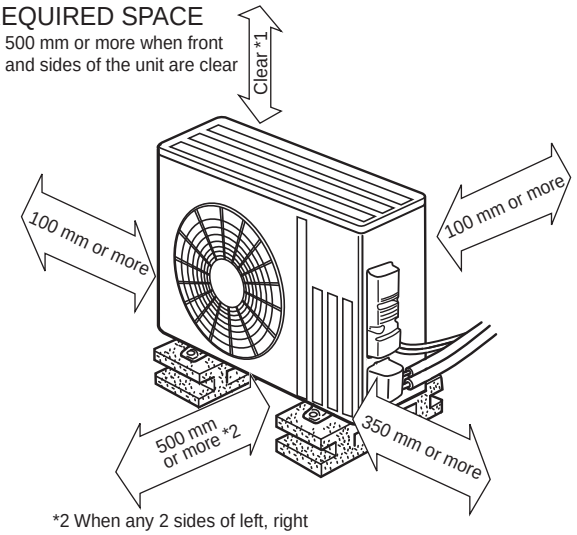
Unit: mm



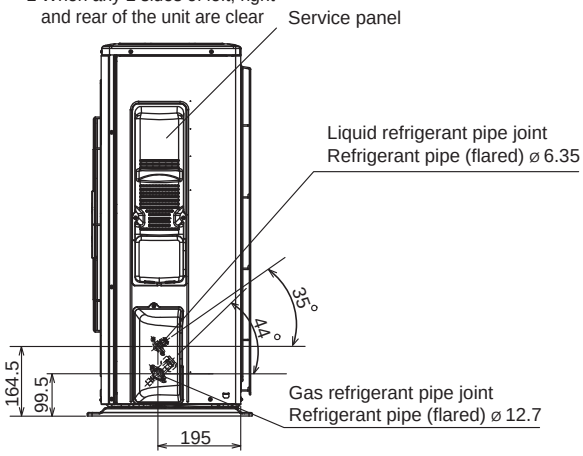


REQUIRED SPACE

*1 500 mm or more when front and sides of the unit are clear

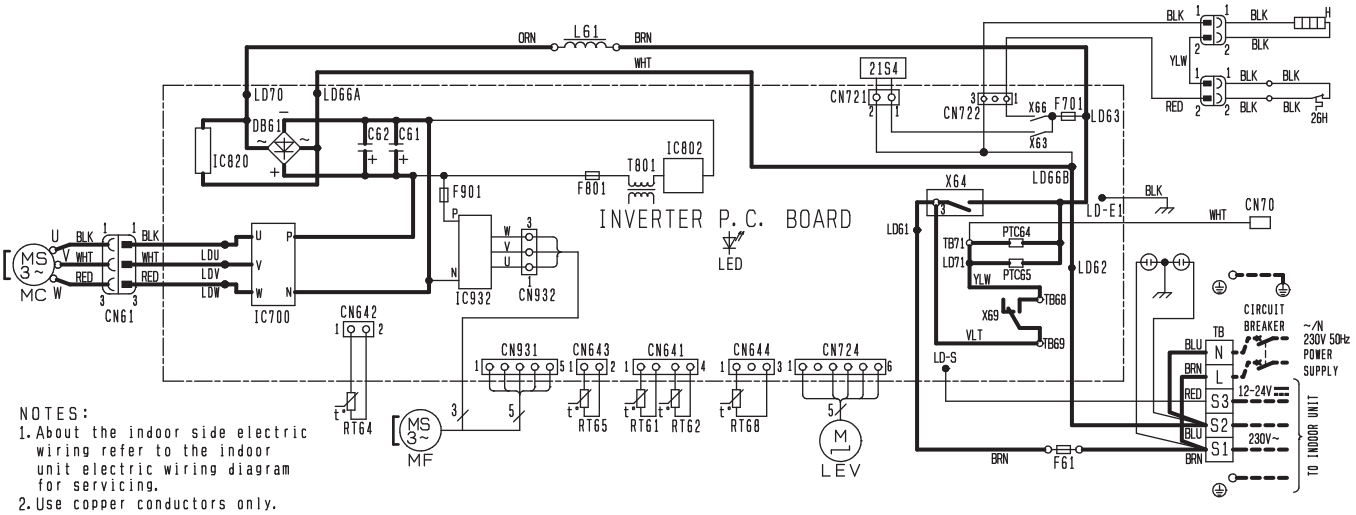


*2 When any 2 sides of left, right and rear of the unit are clear



6 WIRING DIAGRAM

MUZ-FH25VEHZ - E1, ER1, ET1, E3, ER3
MUZ-FH35VEHZ - E1, ER1, ET1

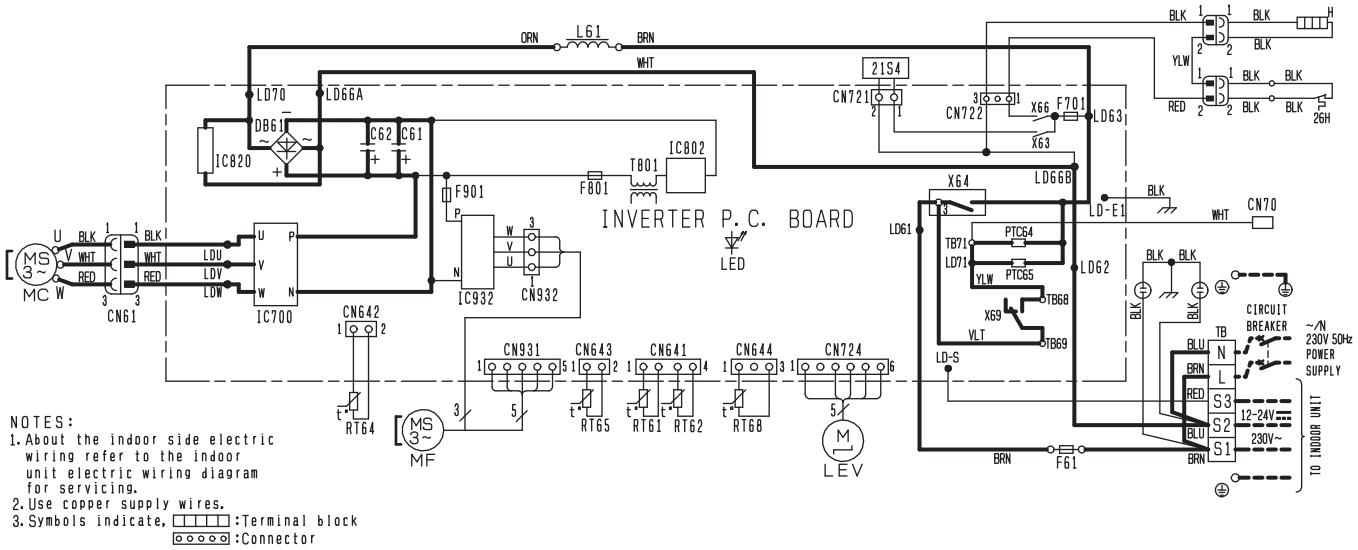


NOTES:
1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring).
3. Symbols indicate, □□□□□ :Terminal block

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CN70	CONNECTOR	LEV	EXPANSION VALVE COIL	RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR.
C61, C62	SMOOTHING CAPACITOR	L61	REACTOR		
DB61	DIODE MODULE	MC	COMPRESSOR	TB	TERMINAL BLOCK
F61	FUSE (T20AL250V)	MF	FAN MOTOR	T801	TRANSFORMER
F701, F801, F901	FUSE (T3.15AL250V)	PTC64, PTC65	CIRCUIT PROTECTION	X63, X64 X66, X69	RELAY
H	DEFROST HEATER	RT61	DEFROST THERMISTOR		
IC700, IC820, IC932	POWER MODULE	RT62	DISCHARGE TEMP. THERMISTOR	21S4	REVERSING VALVE COIL
IC802	POWER DEVICE	RT64	FIN TEMP. THERMISTOR	26H	HEATER PROTECTOR
LED	LED	RT65	AMBIENT TEMP. THERMISTOR		

MUZ-FH25VEHZ - E4, ER4, ET2

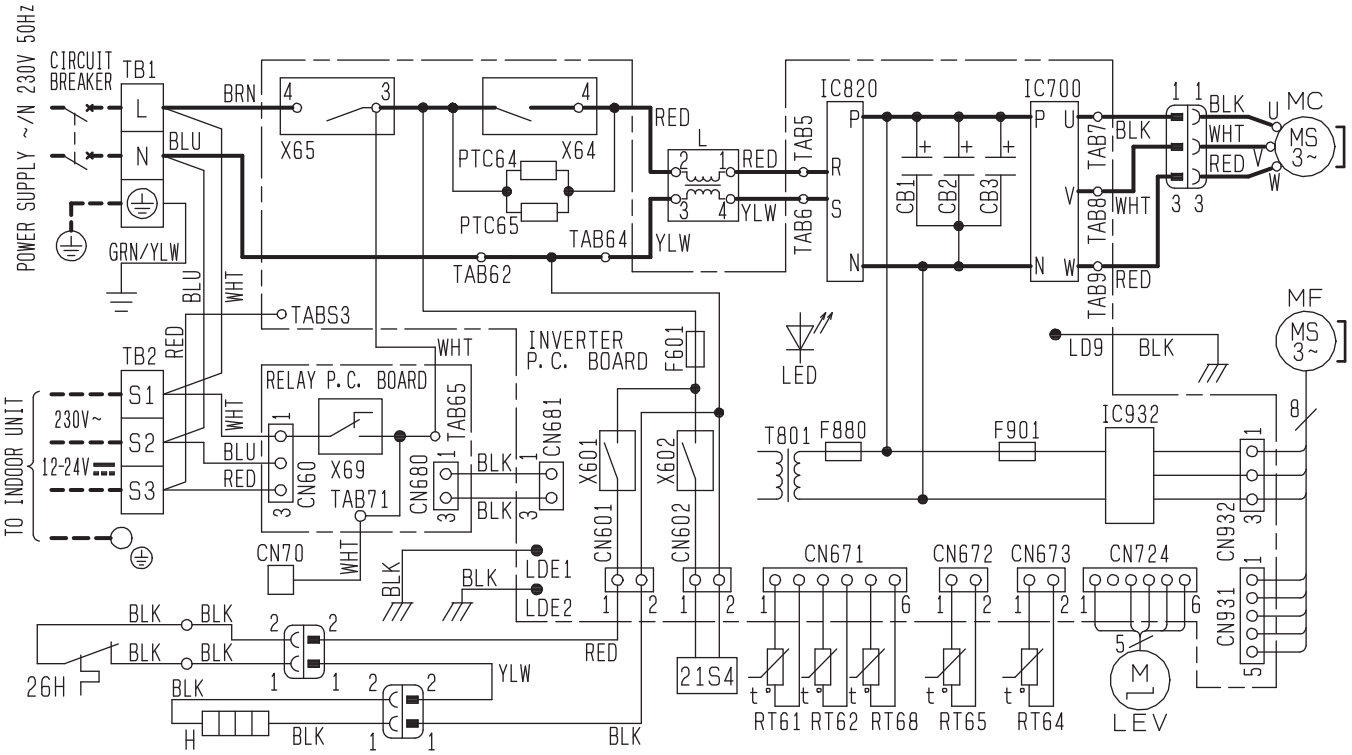
MUZ-FH35VEHZ - E2, ER2, ET2



NOTES:
1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
2. Use copper supply wires.
3. Symbols indicate, ▭▭▭ :Terminal block
   ▭▭▭ :Connector

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CN70	CONNECTOR	LEV	EXPANSION VALVE COIL	RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR.
C61, C62	SMOOTHING CAPACITOR	L61	REACTOR		
DB61	DIODE MODULE	MC	COMPRESSOR	TB	TERMINAL BLOCK
F61	FUSE (T20AL250V)	MF	FAN MOTOR	T801	TRANSFORMER
F701, F801, F901	FUSE (T3.15AL250V)	PTC64, PTC65	CIRCUIT PROTECTION	X63, X64	RELAY
H	DEFROST HEATER	RT61	DEFROST THERMISTOR	X66, X69	
IC700, IC820, IC932	POWER MODULE	RT62	DISCHARGE TEMP. THERMISTOR	21S4	REVERSING VALVE COIL
IC802	POWER DEVICE	RT64	FIN TEMP. THERMISTOR	26H	HEATER PROTECTOR
LED	LED	RT65	AMBIENT TEMP. THERMISTOR		

MUZ-FH50VEHZ - E1, ER1, ET1, E2, ER2, ET2



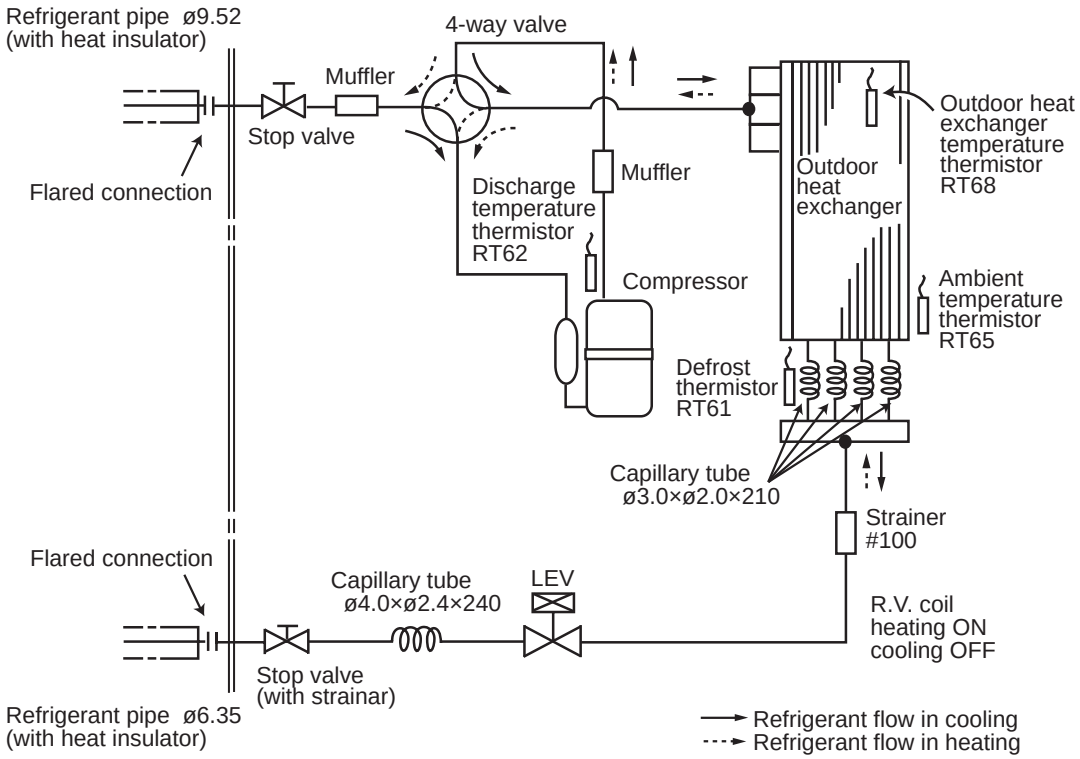
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CB1~3	SMOOTHING CAPACITOR	IC932	IGBT Module	RT61	DEFROST THERMISTOR	X601	RELAY
CN70	CONNECTOR	L	REACTOR	RT62	DISCHARGE TEMP. THERMISTOR	X602	RELAY
F601	FUSE(T3.15AL250V)	LED	LED	RT64	FIN TEMP. THERMISTOR	X64	RELAY
F880	FUSE(T3.15AL250V)	LEV	EXPANSION VALVE COIL	RT65	AMBIENT TEMP. THERMISTOR	X65	RELAY
F901	FUSE(T3.15AL250V)	MC	COMPRESSOR	RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR	X69	RELAY
H	DEFROST HEATER	MF	FAN MOTOR			21S4	REVERSING VALVE COIL
IC700	IGBT Module	PTC64	CIRCUIT PROTECTION	TB1, TB2	TERMINAL BLOCK	26H	HEATER PROTECTOR
IC820	DIODE Module	PTC65	CIRCUIT PROTECTION	T801	TRANSFORMER		

NOTES 1. About the indoor side electric wiring, refer to the indoor unit electric wiring diagram for servicing.
2. Use copper supply wires. 3. Symbols indicate, □□□ :Terminal block ⊡⊡⊡ :Connector

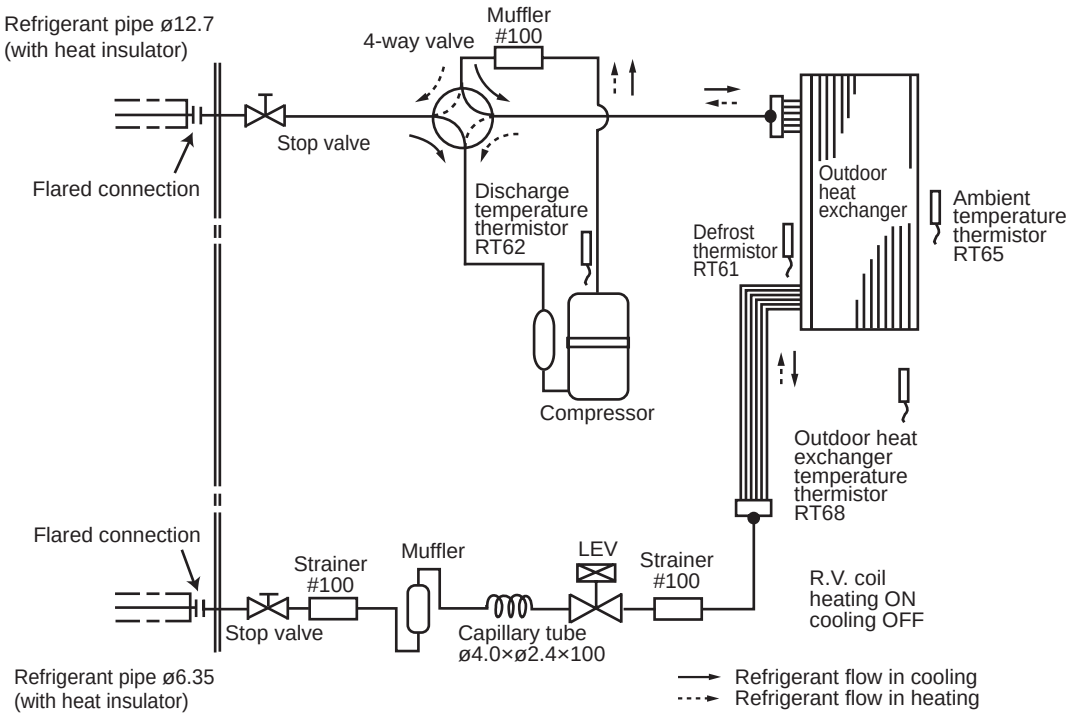
7 REFRIGERANT SYSTEM DIAGRAM

MUZ-FH25VEHZ
MUZ-FH35VEHZ

Unit: mm

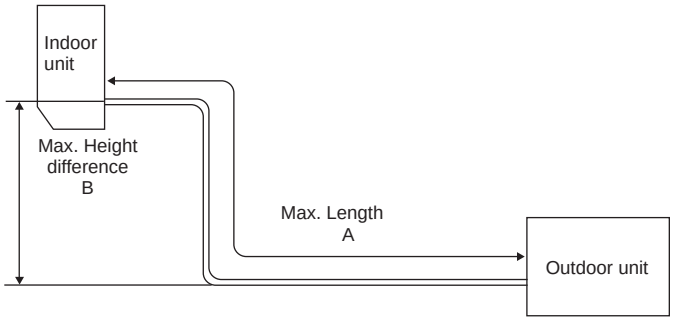


MUZ-FH50VEHZ



MAX. REFRIGERANT PIPING LENGTH and MAX. HEIGHT DIFEFRENCE

Model	Refrigerant piping: m		Piping size O.D: mm	
	Max. Length A	Max. Height difference B	Gas	Liquid
MUZ-FH25/35	20	12	9.52	6.35
MUZ-FH50	30	15	12.7	6.35



ADDITIONAL REFRIGERANT CHARGE (R410A: g)

Model	Outdoor unit precharged	Refrigerant piping length (one way)									
		7 m	8 m	9 m	10 m	11 m	12 m	13 m	14 m	15 m	20 m
MUZ-FH25/35	1,150	0	30	60	90	120	150	180	210	240	390

Calculation: X g = 30 g/m × (Refrigerant piping length (m) - 7)

Model	Outdoor unit precharged	Refrigerant piping length (one way)					
		7 m	10 m	15 m	20 m	25 m	30 m
MUZ-FH50	1,550	0	60	160	260	360	460

Calculation: X g = 20 g/m × (Refrigerant piping length (m) – 7)

8 PERFORMANCE CURVES

MUZ-FH25VEHZ
MUZ-FH35VEHZ
MUZ-FH50VEHZ

The standard specifications apply only to the operation of the air conditioner under normal conditions. Since operating conditions vary according to the areas where these units are installed, the following information has been provided to clarify the operating characteristics of the air conditioner under the conditions indicated by the performance curve.

(1) GUARANTEED VOLTAGE

198 ~ 264 V, 50 Hz

(2) AIR FLOW

Air flow should be set at MAX.

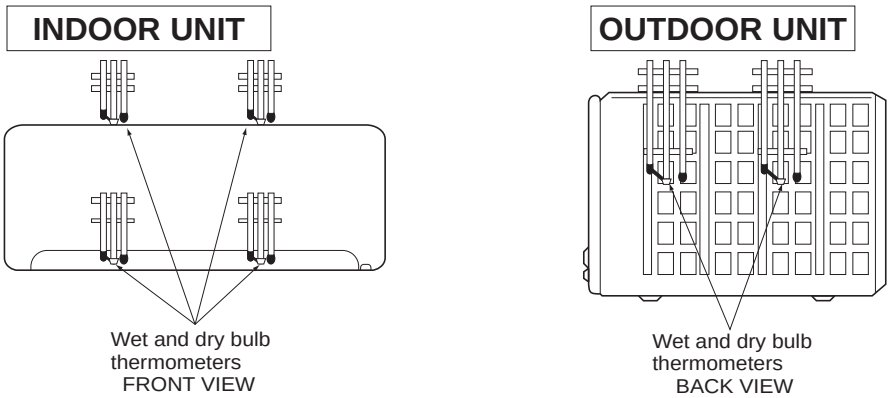
(3) MAIN READINGS

(1) Indoor intake air wet-bulb temperature:	°C [WB]	Cooling
(2) Indoor outlet air wet-bulb temperature:	°C [WB]	
(3) Outdoor intake air dry-bulb temperature:	°C [DB]	
(4) Total input:	W	
(5) Indoor intake air dry-bulb temperature:	°C [DB]	Heating
(6) Outdoor intake air wet-bulb temperature:	°C [WB]	
(7) Total input:	W	

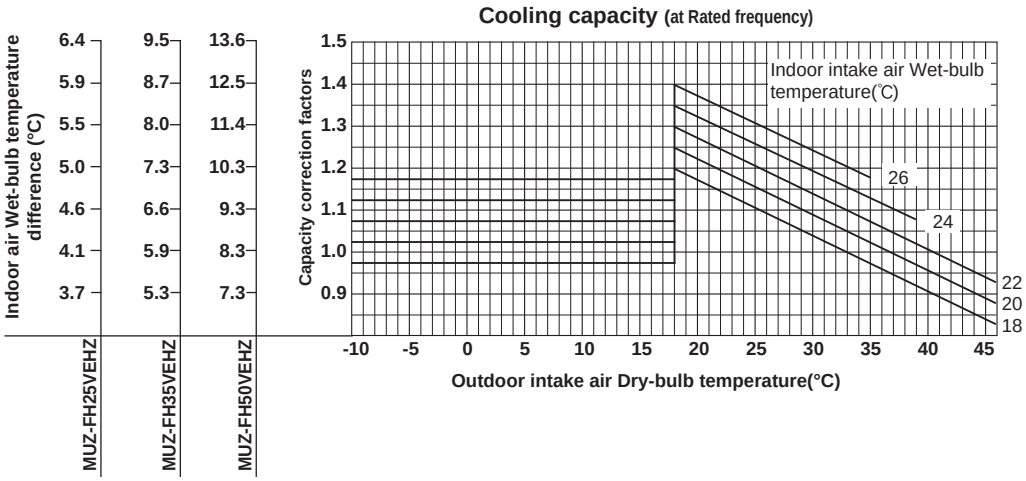
Indoor air wet and dry bulb temperature difference on the left side of the following chart shows the difference between the indoor intake air wet and dry bulb temperature and the indoor outlet air wet and dry bulb temperature for your reference at service.

How to measure the indoor air wet and dry bulb temperature difference

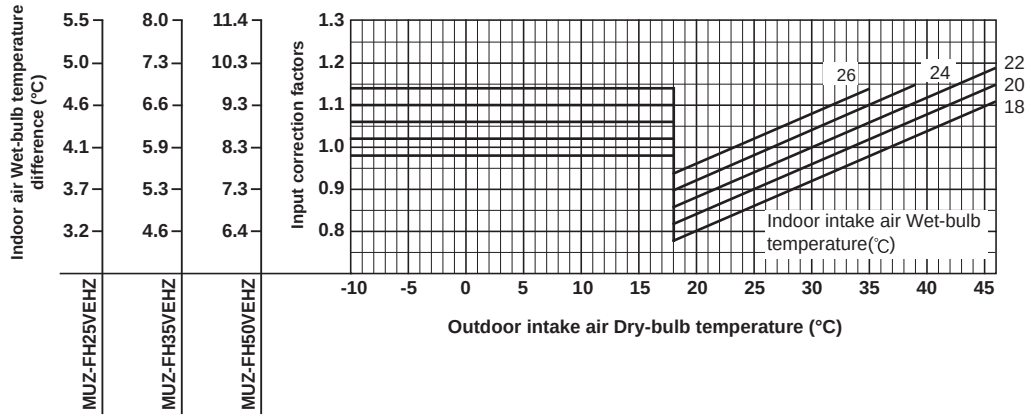
1. Attach at least 2 sets of wet and dry bulb thermometers to the indoor air intake as shown in the figure, and at least 2 sets of wet and dry bulb thermometers to the indoor air outlet. The thermometers must be attached to the position where air speed is high.
2. Attach at least 2 sets of wet and dry bulb thermometers to the outdoor air intake. Cover the thermometers to prevent direct rays of the sun.
3. Check that the air filter is cleaned.
4. Open windows and doors of room.
5. Press the EMERGENCY OPERATION switch once (twice) to start the EMERGENCY COOL (HEAT) MODE.
6. When system stabilizes after more than 15 minutes, measure temperature and take an average temperature.
7. 10 minutes later, measure temperature again and check that the temperature does not change.



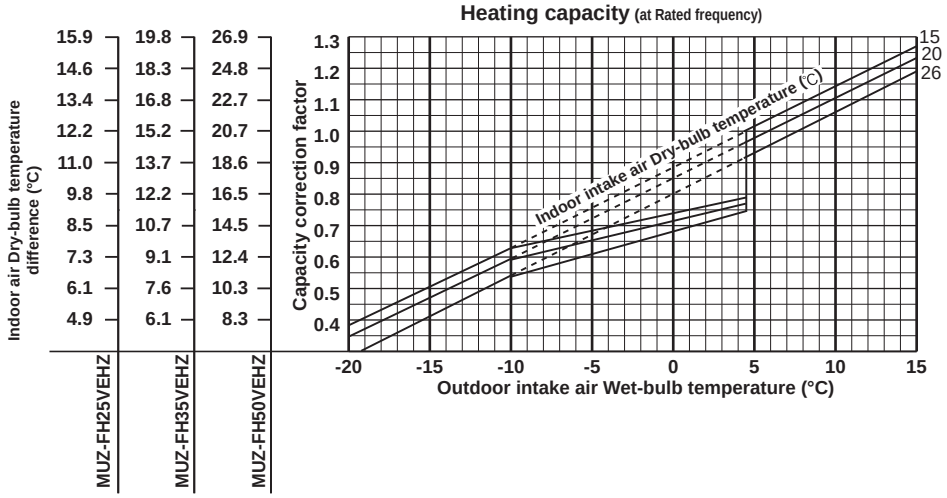
8-1. CAPACITY AND INPUT CURVES



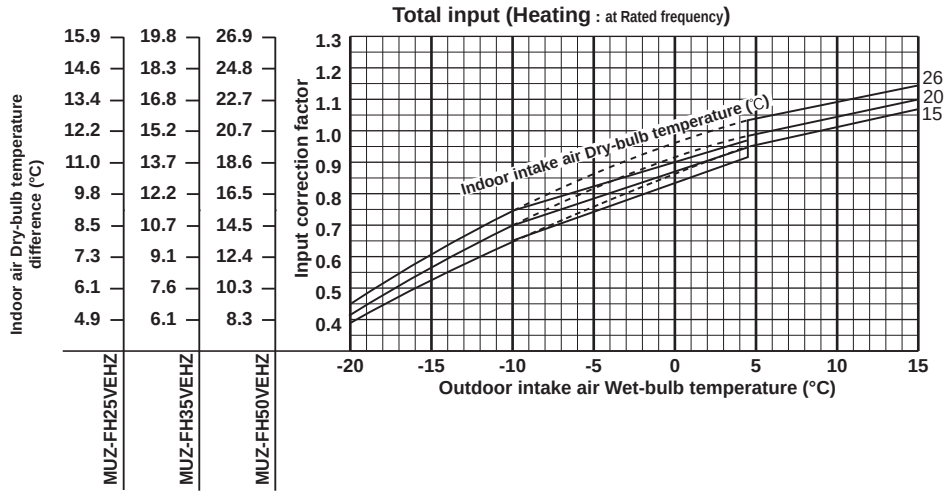
Total input (Cooling : at Rated frequency)



Heating capacity (at Rated frequency)


Indoor air Dry-bulb temperature difference (°C)
15.9 14.6 13.4 12.2 11.0 9.8 8.5 7.3 6.1 4.9
19.8 18.3 16.8 15.2 13.7 12.2 10.7 9.1 7.6 6.1
26.9 24.8 22.7 20.7 18.6 16.5 14.5 12.4 10.3 8.3
MUZ-FH25VEHZ
MUZ-FH35VEHZ
MUZ-FH50VEHZ
Capacity correction factor
1.3 1.2 1.1 1.0 0.9 0.8 0.7 0.6 0.5 0.4
15
20
26
Indoor intake air Dry-bulb temperature (℃)
-20 -15 -10 -5 0 5 10 15
Outdoor intake air Wet-bulb temperature (°C)

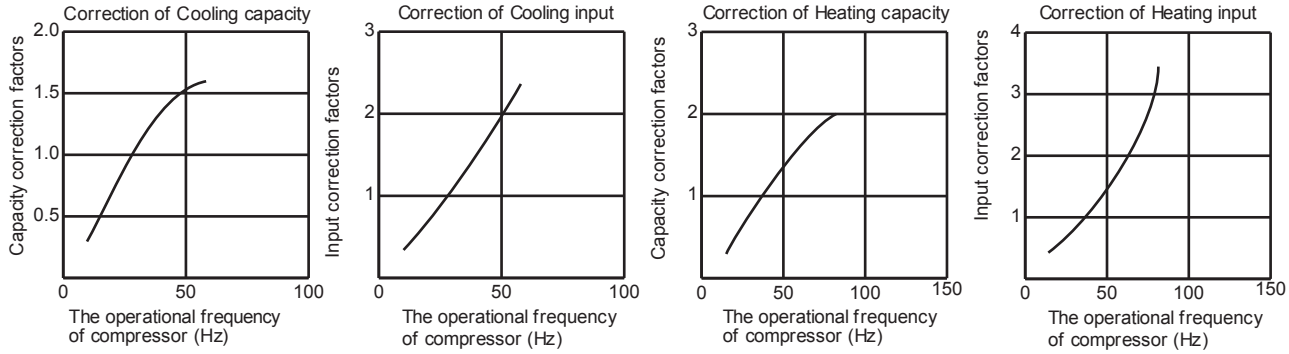
Total input (Heating : at Rated frequency)


Indoor air Dry-bulb temperature difference (°C)
15.9 14.6 13.4 12.2 11.0 9.8 8.5 7.3 6.1 4.9
19.8 18.3 16.8 15.2 13.7 12.2 10.7 9.1 7.6 6.1
26.9 24.8 22.7 20.7 18.6 16.5 14.5 12.4 10.3 8.3
MUZ-FH25VEHZ
MUZ-FH35VEHZ
MUZ-FH50VEHZ
Input correction factor
1.3 1.2 1.1 1.0 0.9 0.8 0.7 0.6 0.5 0.4
26
20
15
Indoor intake air Dry-bulb temperature (℃)
-20 -15 -10 -5 0 5 10 15
Outdoor intake air Wet-bulb temperature (°C)

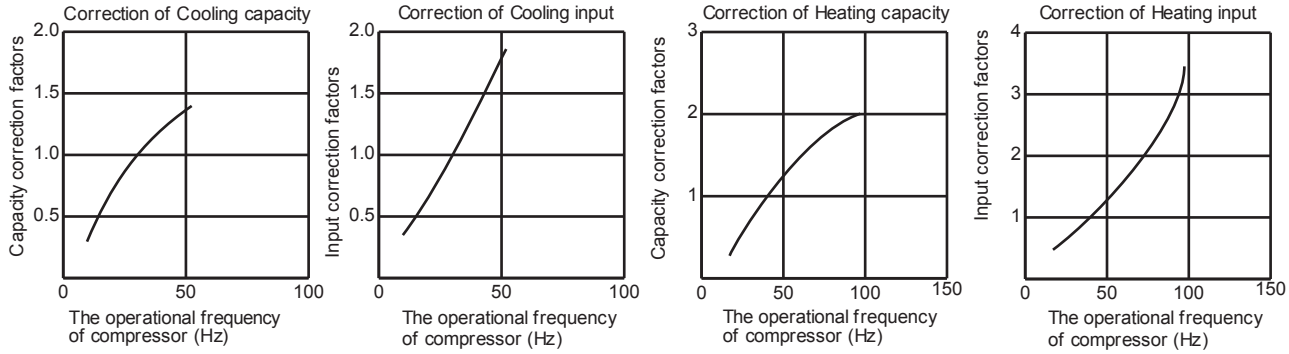
NOTE: The above broken lines are for the heating operation without any frost and defrost operation.

8-2. CAPACITY AND INPUT CORRECTION BY OPERATIONAL FREQUENCY OF COMPRESSOR

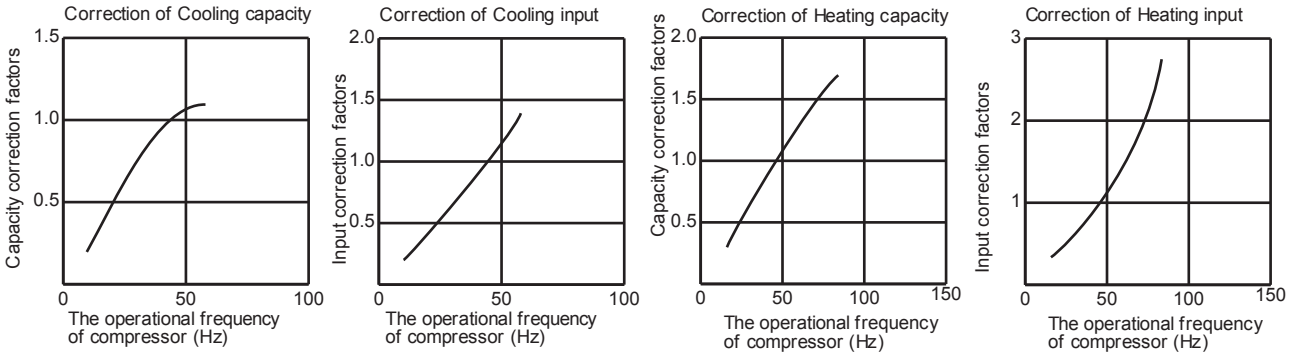
MUZ-FH25VEHZ-E1, E4, ER1, ER4, ET1, ET2



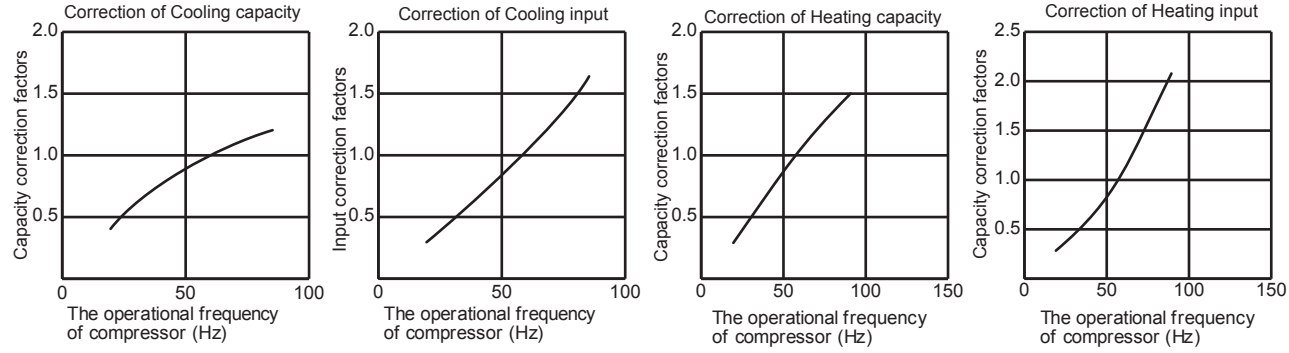
MUZ-FH25VEHZ-E3, ER3



MUZ-FH35VEHZ



MUZ-FH50VEHZ



8-3. HOW TO OPERATE FIXED-FREQUENCY OPERATION

<Test run operation>

1. Press EMERGENCY OPERATION switch to start COOL or HEAT mode (COOL: Press once, HEAT: Press twice).
2. Test run operation starts and continues to operate for 30 minutes.
3. Compressor operates at rated frequency in COOL mode or 58 Hz in HEAT mode.
4. Indoor fan operates at High speed.
5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (operation frequency of compressor varies).
6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.

8-4. OUTDOOR LOW PRESSURE AND OUTDOOR UNIT CURRENT

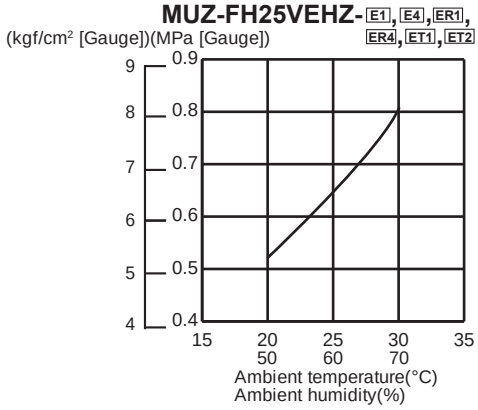
COOL operation

① Both indoor and outdoor unit are under the same temperature/ humidity condition.
② Operation: TEST RUN OPERATION (Refer to 8-3.)

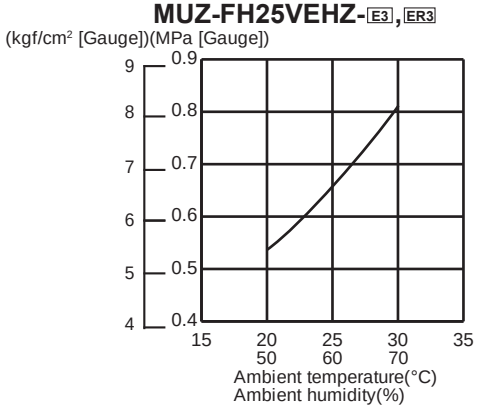
Dry-bulb temperature (°C)	Relative humidity (%)
20	50
25	60
30	70

Outdoor low pressure

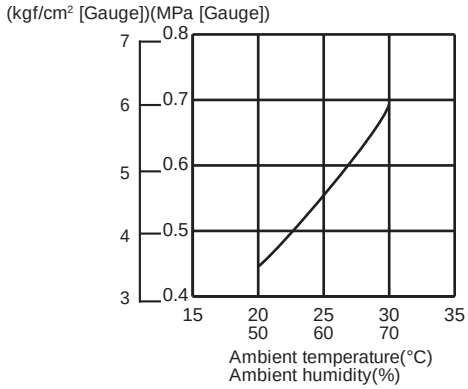
MUZ-FH25VEHZ-E1, E4, ER1, ER4, ET1, ET2



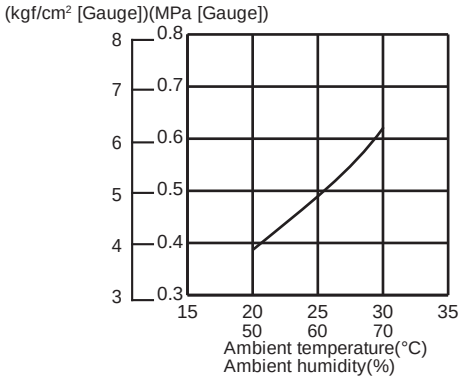
MUZ-FH25VEHZ-E3, ER3



MUZ-FH35VEHZ



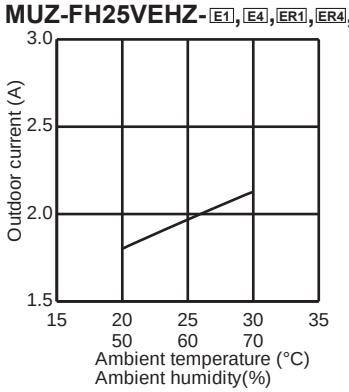
MUZ-FH50VEHZ



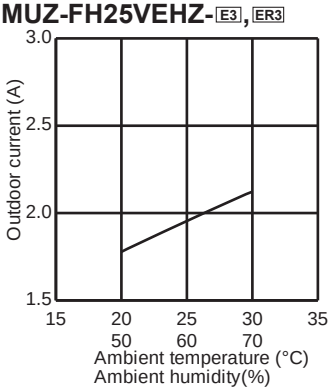
NOTE:
The unit of pressure has been changed to MPa on the international system of units (SI unit system)
The conversion factor is: **1 (MPa [Gauge]) = 10.2 (kgf/cm² [Gauge])**

Outdoor unit current

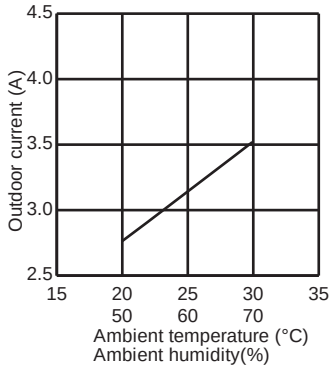
MUZ-FH25VEHZ-E1, E4, ER1, ER4, ET1, ET2



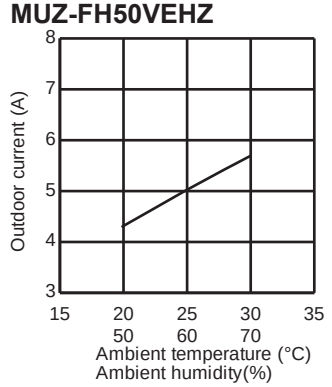
MUZ-FH25VEHZ-E3, ER3



MUZ-FH35VEHZ



MUZ-FH50VEHZ



HEAT operation

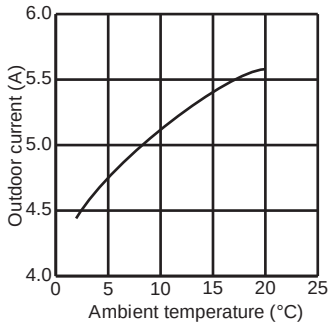
① Condition:

	Indoor	Outdoor			
Dry bulb temperature (°C)	20.0	2	7	15	20.0
Wet bulb temperature (°C)	14.5	1	6	12	14.5

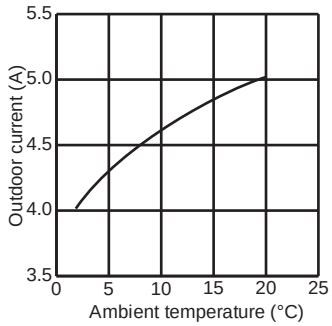
② Operation: Test run operation (Refer to 8-3.)

Outdoor unit current

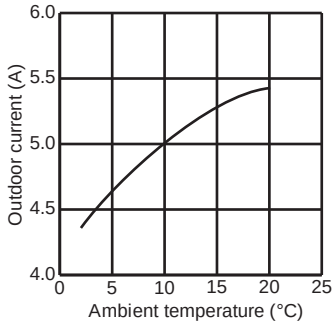
MUZ-FH25VEHZ-E1,E4,ER1,ER4,ET1,ET2



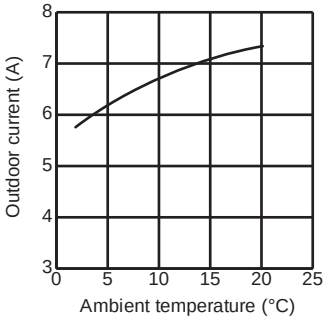
MUZ-FH25VEHZ-E3,ER3



MUZ-FH35VEHZ



MUZ-FH50VEHZ



PERFORMANCE DATA COOL operation at Rated frequency

MUZ-FH25VEHZ

CAPACITY: 2.5 kW SHF: 0.95 INPUT: 485 W

INDOOR DB (°C)	INDOOR WB (°C)	OUTDOOR DB (°C)															
		21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.94	2.26	0.77	388	2.81	2.17	0.77	407	2.70	2.08	0.77	427	2.60	2.00	0.77	446
21	20	3.06	1.99	0.65	407	2.94	1.91	0.65	432	2.85	1.85	0.65	441	2.75	1.79	0.65	461
22	18	2.94	2.38	0.81	388	2.81	2.28	0.81	407	2.70	2.19	0.81	427	2.60	2.11	0.81	446
22	20	3.06	2.11	0.69	407	2.94	2.03	0.69	432	2.85	1.97	0.69	441	2.75	1.90	0.69	461
22	22	3.19	1.82	0.57	422	3.08	1.75	0.57	449	3.00	1.71	0.57	461	2.88	1.64	0.57	480
23	18	2.94	2.50	0.85	388	2.81	2.39	0.85	407	2.70	2.30	0.85	427	2.60	2.21	0.85	446
23	20	3.06	2.24	0.73	407	2.94	2.14	0.73	432	2.85	2.08	0.73	441	2.75	2.01	0.73	461
23	22	3.19	1.94	0.61	422	3.08	1.88	0.61	449	3.00	1.83	0.61	461	2.88	1.75	0.61	480
24	18	2.94	2.61	0.89	388	2.81	2.50	0.89	407	2.70	2.40	0.89	427	2.60	2.31	0.89	446
24	20	3.06	2.36	0.77	407	2.94	2.26	0.77	432	2.85	2.19	0.77	441	2.75	2.12	0.77	461
24	22	3.19	2.07	0.65	422	3.08	2.00	0.65	449	3.00	1.95	0.65	461	2.88	1.87	0.65	480
24	24	3.35	1.78	0.53	441	3.23	1.71	0.53	466	3.15	1.67	0.53	480	3.05	1.62	0.53	504
25	18	2.94	2.73	0.93	388	2.81	2.62	0.93	407	2.70	2.51	0.93	427	2.60	2.42	0.93	446
25	20	3.06	2.48	0.81	407	2.94	2.38	0.81	432	2.85	2.31	0.81	441	2.75	2.23	0.81	461
25	22	3.19	2.20	0.69	422	3.08	2.12	0.69	449	3.00	2.07	0.69	461	2.88	1.98	0.69	480
25	24	3.35	1.91	0.57	441	3.23	1.84	0.57	466	3.15	1.80	0.57	480	3.05	1.74	0.57	504
26	18	2.94	2.85	0.97	388	2.81	2.73	0.97	407	2.70	2.62	0.97	427	2.60	2.52	0.97	446
26	20	3.06	2.60	0.85	407	2.94	2.50	0.85	432	2.85	2.42	0.85	441	2.75	2.34	0.85	461
26	22	3.19	2.33	0.73	422	3.08	2.24	0.73	449	3.00	2.19	0.73	461	2.88	2.10	0.73	480
26	24	3.35	2.04	0.61	441	3.23	1.97	0.61	466	3.15	1.92	0.61	480	3.05	1.86	0.61	504
26	26	3.45	1.69	0.49	466	3.35	1.64	0.49	490	3.30	1.62	0.49	504	3.20	1.57	0.49	519
27	18	2.94	2.94	1.00	388	2.81	2.81	1.00	407	2.70	2.70	1.00	427	2.60	2.60	1.00	446
27	20	3.06	2.73	0.89	407	2.94	2.61	0.89	432	2.85	2.54	0.89	441	2.75	2.45	0.89	461
27	22	3.19	2.45	0.77	422	3.08	2.37	0.77	449	3.00	2.31	0.77	461	2.88	2.21	0.77	480
27	24	3.35	2.18	0.65	441	3.23	2.10	0.65	466	3.15	2.05	0.65	480	3.05	1.98	0.65	504
27	26	3.45	1.83	0.53	466	3.35	1.78	0.53	490	3.30	1.75	0.53	504	3.20	1.70	0.53	519
28	18	2.94	2.94	1.00	388	2.81	2.81	1.00	407	2.70	2.70	1.00	427	2.60	2.60	1.00	446
28	20	3.06	2.85	0.93	407	2.94	2.73	0.93	432	2.85	2.65	0.93	441	2.75	2.56	0.93	461
28	22	3.19	2.58	0.81	422	3.08	2.49	0.81	449	3.00	2.43	0.81	461	2.88	2.33	0.81	480
28	24	3.35	2.31	0.69	441	3.23	2.23	0.69	466	3.15	2.17	0.69	480	3.05	2.10	0.69	504
28	26	3.45	1.97	0.57	466	3.35	1.91	0.57	490	3.30	1.88	0.57	504	3.20	1.82	0.57	519
29	18	2.94	2.94	1.00	388	2.81	2.81	1.00	407	2.70	2.70	1.00	427	2.60	2.60	1.00	446
29	20	3.06	2.97	0.97	407	2.94	2.85	0.97	432	2.85	2.76	0.97	441	2.75	2.67	0.97	461
29	22	3.19	2.71	0.85	422	3.08	2.61	0.85	449	3.00	2.55	0.85	461	2.88	2.44	0.85	480
29	24	3.35	2.45	0.73	441	3.23	2.35	0.73	466	3.15	2.30	0.73	480	3.05	2.23	0.73	504
29	26	3.45	2.10	0.61	466	3.35	2.04	0.61	490	3.30	2.01	0.61	504	3.20	1.95	0.61	519
30	18	2.94	2.94	1.00	388	2.81	2.81	1.00	407	2.70	2.70	1.00	427	2.60	2.60	1.00	446
30	20	3.06	3.06	1.00	407	2.94	2.94	1.00	432	2.85	2.85	1.00	441	2.75	2.75	1.00	461
30	22	3.19	2.84	0.89	422	3.08	2.74	0.89	449	3.00	2.67	0.89	461	2.88	2.56	0.89	480
30	24	3.35	2.58	0.77	441	3.23	2.48	0.77	466	3.15	2.43	0.77	480	3.05	2.35	0.77	504
30	26	3.45	2.24	0.65	466	3.35	2.18	0.65	490	3.30	2.15	0.65	504	3.20	2.08	0.65	519
31	18	2.94	2.94	1.00	388	2.81	2.81	1.00	407	2.70	2.70	1.00	427	2.60	2.60	1.00	446
31	20	3.06	3.06	1.00	407	2.94	2.94	1.00	432	2.85	2.85	1.00	441	2.75	2.75	1.00	461
31	22	3.19	2.96	0.93	422	3.08	2.86	0.93	449	3.00	2.79	0.93	461	2.88	2.67	0.93	480
31	24	3.35	2.71	0.81	441	3.23	2.61	0.81	466	3.15	2.55	0.81	480	3.05	2.47	0.81	504
31	26	3.45	2.38	0.69	466	3.35	2.31	0.69	490	3.30	2.28	0.69	504	3.20	2.21	0.69	519
32	18	2.94	2.94	1.00	388	2.81	2.81	1.00	407	2.70	2.70	1.00	427	2.60	2.60	1.00	446
32	20	3.06	3.06	1.00	407	2.94	2.94	1.00	432	2.85	2.85	1.00	441	2.75	2.75	1.00	461
32	22	3.19	3.09	0.97	422	3.08	2.98	0.97	449	3.00	2.91	0.97	461	2.88	2.79	0.97	480
32	24	3.35	2.85	0.85	441	3.23	2.74	0.85	466	3.15	2.68	0.85	480	3.05	2.59	0.85	504
32	26	3.45	2.52	0.73	466	3.35	2.45	0.73	490	3.30	2.41	0.73	504	3.20	2.34	0.73	519

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation at Rated frequency

MUZ-FH25VEHZ

CAPACITY: 2.5 kW SHF: 0.95 INPUT: 485 W

INDOOR DB (°C)	INDOOR WB (°C)	OUTDOOR DB (°C)											
		35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	2.45	1.89	0.77	475	2.25	1.73	0.77	504	2.08	1.60	0.77	524
21	20	2.58	1.67	0.65	495	2.40	1.56	0.65	519	2.23	1.45	0.65	548
22	18	2.45	1.98	0.81	475	2.25	1.82	0.81	504	2.08	1.68	0.81	524
22	20	2.58	1.78	0.69	495	2.40	1.66	0.69	519	2.23	1.54	0.69	548
22	22	2.73	1.55	0.57	514	2.55	1.45	0.57	543	2.38	1.35	0.57	563
23	18	2.45	2.08	0.85	475	2.25	1.91	0.85	504	2.08	1.76	0.85	524
23	20	2.58	1.88	0.73	495	2.40	1.75	0.73	519	2.23	1.62	0.73	548
23	22	2.73	1.66	0.61	514	2.55	1.56	0.61	543	2.38	1.45	0.61	563
24	18	2.45	2.18	0.89	475	2.25	2.00	0.89	504	2.08	1.85	0.89	524
24	20	2.58	1.98	0.77	495	2.40	1.85	0.77	519	2.23	1.71	0.77	548
24	22	2.73	1.77	0.65	514	2.55	1.66	0.65	543	2.38	1.54	0.65	563
24	24	2.88	1.52	0.53	534	2.70	1.43	0.53	558	2.55	1.35	0.53	582
25	18	2.45	2.28	0.93	475	2.25	2.09	0.93	504	2.08	1.93	0.93	524
25	20	2.58	2.09	0.81	495	2.40	1.94	0.81	519	2.23	1.80	0.81	548
25	22	2.73	1.88	0.69	514	2.55	1.76	0.69	543	2.38	1.64	0.69	563
25	24	2.88	1.64	0.57	534	2.70	1.54	0.57	558	2.55	1.45	0.57	582
26	18	2.45	2.38	0.97	475	2.25	2.18	0.97	504	2.08	2.01	0.97	524
26	20	2.58	2.19	0.85	495	2.40	2.04	0.85	519	2.23	1.89	0.85	548
26	22	2.73	1.99	0.73	514	2.55	1.86	0.73	543	2.38	1.73	0.73	563
26	24	2.88	1.75	0.61	534	2.70	1.65	0.61	558	2.55	1.56	0.61	582
26	26	3.03	1.48	0.49	553	2.85	1.40	0.49	577	2.68	1.31	0.49	601
27	18	2.45	2.45	1.00	475	2.25	2.25	1.00	504	2.08	2.08	1.00	524
27	20	2.58	2.29	0.89	495	2.40	2.14	0.89	519	2.23	1.98	0.89	548
27	22	2.73	2.10	0.77	514	2.55	1.96	0.77	543	2.38	1.83	0.77	563
27	24	2.88	1.87	0.65	534	2.70	1.76	0.65	558	2.55	1.66	0.65	582
27	26	3.03	1.60	0.53	553	2.85	1.51	0.53	577	2.68	1.42	0.53	601
28	18	2.45	2.45	1.00	475	2.25	2.25	1.00	504	2.08	2.08	1.00	524
28	20	2.58	2.39	0.93	495	2.40	2.23	0.93	519	2.23	2.07	0.93	548
28	22	2.73	2.21	0.81	514	2.55	2.07	0.81	543	2.38	1.92	0.81	563
28	24	2.88	1.98	0.69	534	2.70	1.86	0.69	558	2.55	1.76	0.69	582
28	26	3.03	1.72	0.57	553	2.85	1.62	0.57	577	2.68	1.52	0.57	601
29	18	2.45	2.45	1.00	475	2.25	2.25	1.00	504	2.08	2.08	1.00	524
29	20	2.58	2.50	0.97	495	2.40	2.33	0.97	519	2.23	2.16	0.97	548
29	22	2.73	2.32	0.85	514	2.55	2.17	0.85	543	2.38	2.02	0.85	563
29	24	2.88	2.10	0.73	534	2.70	1.97	0.73	558	2.55	1.86	0.73	582
29	26	3.03	1.85	0.61	553	2.85	1.74	0.61	577	2.68	1.63	0.61	601
30	18	2.45	2.45	1.00	475	2.25	2.25	1.00	504	2.08	2.08	1.00	524
30	20	2.58	2.58	1.00	495	2.40	2.40	1.00	519	2.23	2.23	1.00	548
30	22	2.73	2.43	0.89	514	2.55	2.27	0.89	543	2.38	2.11	0.89	563
30	24	2.88	2.21	0.77	534	2.70	2.08	0.77	558	2.55	1.96	0.77	582
30	26	3.03	1.97	0.65	553	2.85	1.85	0.65	577	2.68	1.74	0.65	601
31	18	2.45	2.45	1.00	475	2.25	2.25	1.00	504	2.08	2.08	1.00	524
31	20	2.58	2.58	1.00	495	2.40	2.40	1.00	519	2.23	2.23	1.00	548
31	22	2.73	2.53	0.93	514	2.55	2.37	0.93	543	2.38	2.21	0.93	563
31	24	2.88	2.33	0.81	534	2.70	2.19	0.81	558	2.55	2.07	0.81	582
31	26	3.03	2.09	0.69	553	2.85	1.97	0.69	577	2.68	1.85	0.69	601
32	18	2.45	2.45	1.00	475	2.25	2.25	1.00	504	2.08	2.08	1.00	524
32	20	2.58	2.58	1.00	495	2.40	2.40	1.00	519	2.23	2.23	1.00	548
32	22	2.73	2.64	0.97	514	2.55	2.47	0.97	543	2.38	2.30	0.97	563
32	24	2.88	2.44	0.85	534	2.70	2.30	0.85	558	2.55	2.17	0.85	582
32	26	3.03	2.21	0.73	553	2.85	2.08	0.73	577	2.68	1.95	0.73	601

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation at Rated frequency

MUZ-FH35VEHZ

CAPACITY: 3.5 kW SHF: 0.84 INPUT: 820 W

INDOOR DB (°C)	INDOOR WB (°C)	OUTDOOR DB (°C)															
		21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.11	2.71	0.66	656	3.94	2.60	0.66	689	3.78	2.49	0.66	722	3.64	2.40	0.66	754
21	20	4.29	2.32	0.54	689	4.11	2.22	0.54	730	3.99	2.15	0.54	746	3.85	2.08	0.54	779
22	18	4.11	2.88	0.70	656	3.94	2.76	0.70	689	3.78	2.65	0.70	722	3.64	2.55	0.70	754
22	20	4.29	2.49	0.58	689	4.11	2.39	0.58	730	3.99	2.31	0.58	746	3.85	2.23	0.58	779
22	22	4.46	2.05	0.46	713	4.31	1.98	0.46	759	4.20	1.93	0.46	779	4.03	1.85	0.46	812
23	18	4.11	3.04	0.74	656	3.94	2.91	0.74	689	3.78	2.80	0.74	722	3.64	2.69	0.74	754
23	20	4.29	2.66	0.62	689	4.11	2.55	0.62	730	3.99	2.47	0.62	746	3.85	2.39	0.62	779
23	22	4.46	2.23	0.50	713	4.31	2.15	0.50	759	4.20	2.10	0.50	779	4.03	2.01	0.50	812
24	18	4.11	3.21	0.78	656	3.94	3.07	0.78	689	3.78	2.95	0.78	722	3.64	2.84	0.78	754
24	20	4.29	2.83	0.66	689	4.11	2.71	0.66	730	3.99	2.63	0.66	746	3.85	2.54	0.66	779
24	22	4.46	2.41	0.54	713	4.31	2.32	0.54	759	4.20	2.27	0.54	779	4.03	2.17	0.54	812
24	24	4.69	1.97	0.42	746	4.52	1.90	0.42	787	4.41	1.85	0.42	812	4.27	1.79	0.42	853
25	18	4.11	3.37	0.82	656	3.94	3.23	0.82	689	3.78	3.10	0.82	722	3.64	2.98	0.82	754
25	20	4.29	3.00	0.70	689	4.11	2.88	0.70	730	3.99	2.79	0.70	746	3.85	2.70	0.70	779
25	22	4.46	2.59	0.58	713	4.31	2.50	0.58	759	4.20	2.44	0.58	779	4.03	2.33	0.58	812
25	24	4.69	2.16	0.46	746	4.52	2.08	0.46	787	4.41	2.03	0.46	812	4.27	1.96	0.46	853
26	18	4.11	3.54	0.86	656	3.94	3.39	0.86	689	3.78	3.25	0.86	722	3.64	3.13	0.86	754
26	20	4.29	3.17	0.74	689	4.11	3.04	0.74	730	3.99	2.95	0.74	746	3.85	2.85	0.74	779
26	22	4.46	2.77	0.62	713	4.31	2.67	0.62	759	4.20	2.60	0.62	779	4.03	2.50	0.62	812
26	24	4.69	2.35	0.50	746	4.52	2.26	0.50	787	4.41	2.21	0.50	812	4.27	2.14	0.50	853
26	26	4.83	1.84	0.38	787	4.69	1.78	0.38	828	4.62	1.76	0.38	853	4.48	1.70	0.38	877
27	18	4.11	3.70	0.90	656	3.94	3.54	0.90	689	3.78	3.40	0.90	722	3.64	3.28	0.90	754
27	20	4.29	3.34	0.78	689	4.11	3.21	0.78	730	3.99	3.11	0.78	746	3.85	3.00	0.78	779
27	22	4.46	2.95	0.66	713	4.31	2.84	0.66	759	4.20	2.77	0.66	779	4.03	2.66	0.66	812
27	24	4.69	2.53	0.54	746	4.52	2.44	0.54	787	4.41	2.38	0.54	812	4.27	2.31	0.54	853
27	26	4.83	2.03	0.42	787	4.69	1.97	0.42	828	4.62	1.94	0.42	853	4.48	1.88	0.42	877
28	18	4.11	3.87	0.94	656	3.94	3.70	0.94	689	3.78	3.55	0.94	722	3.64	3.42	0.94	754
28	20	4.29	3.52	0.82	689	4.11	3.37	0.82	730	3.99	3.27	0.82	746	3.85	3.16	0.82	779
28	22	4.46	3.12	0.70	713	4.31	3.01	0.70	759	4.20	2.94	0.70	779	4.03	2.82	0.70	812
28	24	4.69	2.72	0.58	746	4.52	2.62	0.58	787	4.41	2.56	0.58	812	4.27	2.48	0.58	853
28	26	4.83	2.22	0.46	787	4.69	2.16	0.46	828	4.62	2.13	0.46	853	4.48	2.06	0.46	877
29	18	4.11	4.03	0.98	656	3.94	3.86	0.98	689	3.78	3.70	0.98	722	3.64	3.57	0.98	754
29	20	4.29	3.69	0.86	689	4.11	3.54	0.86	730	3.99	3.43	0.86	746	3.85	3.31	0.86	779
29	22	4.46	3.30	0.74	713	4.31	3.19	0.74	759	4.20	3.11	0.74	779	4.03	2.98	0.74	812
29	24	4.69	2.91	0.62	746	4.52	2.80	0.62	787	4.41	2.73	0.62	812	4.27	2.65	0.62	853
29	26	4.83	2.42	0.50	787	4.69	2.35	0.50	828	4.62	2.31	0.50	853	4.48	2.24	0.50	877
30	18	4.11	4.11	1.00	656	3.94	3.94	1.00	689	3.78	3.78	1.00	722	3.64	3.64	1.00	754
30	20	4.29	3.86	0.90	689	4.11	3.70	0.90	730	3.99	3.59	0.90	746	3.85	3.47	0.90	779
30	22	4.46	3.48	0.78	713	4.31	3.36	0.78	759	4.20	3.28	0.78	779	4.03	3.14	0.78	812
30	24	4.69	3.10	0.66	746	4.52	2.98	0.66	787	4.41	2.91	0.66	812	4.27	2.82	0.66	853
30	26	4.83	2.61	0.54	787	4.69	2.53	0.54	828	4.62	2.49	0.54	853	4.48	2.42	0.54	877
31	18	4.11	4.11	1.00	656	3.94	3.94	1.00	689	3.78	3.78	1.00	722	3.64	3.64	1.00	754
31	20	4.29	4.03	0.94	689	4.11	3.87	0.94	730	3.99	3.75	0.94	746	3.85	3.62	0.94	779
31	22	4.46	3.66	0.82	713	4.31	3.53	0.82	759	4.20	3.44	0.82	779	4.03	3.30	0.82	812
31	24	4.69	3.28	0.70	746	4.52	3.16	0.70	787	4.41	3.09	0.70	812	4.27	2.99	0.70	853
31	26	4.83	2.80	0.58	787	4.69	2.72	0.58	828	4.62	2.68	0.58	853	4.48	2.60	0.58	877
32	18	4.11	4.11	1.00	656	3.94	3.94	1.00	689	3.78	3.78	1.00	722	3.64	3.64	1.00	754
32	20	4.29	4.20	0.98	689	4.11	4.03	0.98	730	3.99	3.91	0.98	746	3.85	3.77	0.98	779
32	22	4.46	3.84	0.86	713	4.31	3.70	0.86	759	4.20	3.61	0.86	779	4.03	3.46	0.86	812
32	24	4.69	3.47	0.74	746	4.52	3.34	0.74	787	4.41	3.26	0.74	812	4.27	3.16	0.74	853
32	26	4.83	2.99	0.62	787	4.69	2.91	0.62	828	4.62	2.86	0.62	853	4.48	2.78	0.62	877

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation at Rated frequency

MUZ-FH35VEHZ

CAPACITY: 3.5 kW SHF: 0.84 INPUT: 820 W

INDOOR DB (°C)	INDOOR WB (°C)	OUTDOOR DB (°C)											
		35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	3.43	2.26	0.66	804	3.15	2.08	0.66	853	2.91	1.92	0.66	886
21	20	3.61	1.95	0.54	836	3.36	1.81	0.54	877	3.12	1.68	0.54	927
22	18	3.43	2.40	0.70	804	3.15	2.21	0.70	853	2.91	2.03	0.70	886
22	20	3.61	2.09	0.58	836	3.36	1.95	0.58	877	3.12	1.81	0.58	927
22	22	3.82	1.75	0.46	869	3.57	1.64	0.46	918	3.33	1.53	0.46	951
23	18	3.43	2.54	0.74	804	3.15	2.33	0.74	853	2.91	2.15	0.74	886
23	20	3.61	2.24	0.62	836	3.36	2.08	0.62	877	3.12	1.93	0.62	927
23	22	3.82	1.91	0.50	869	3.57	1.79	0.50	918	3.33	1.66	0.50	951
24	18	3.43	2.68	0.78	804	3.15	2.46	0.78	853	2.91	2.27	0.78	886
24	20	3.61	2.38	0.66	836	3.36	2.22	0.66	877	3.12	2.06	0.66	927
24	22	3.82	2.06	0.54	869	3.57	1.93	0.54	918	3.33	1.80	0.54	951
24	24	4.03	1.69	0.42	902	3.78	1.59	0.42	943	3.57	1.50	0.42	984
25	18	3.43	2.81	0.82	804	3.15	2.58	0.82	853	2.91	2.38	0.82	886
25	20	3.61	2.52	0.70	836	3.36	2.35	0.70	877	3.12	2.18	0.70	927
25	22	3.82	2.21	0.58	869	3.57	2.07	0.58	918	3.33	1.93	0.58	951
25	24	4.03	1.85	0.46	902	3.78	1.74	0.46	943	3.57	1.64	0.46	984
26	18	3.43	2.95	0.86	804	3.15	2.71	0.86	853	2.91	2.50	0.86	886
26	20	3.61	2.67	0.74	836	3.36	2.49	0.74	877	3.12	2.31	0.74	927
26	22	3.82	2.37	0.62	869	3.57	2.21	0.62	918	3.33	2.06	0.62	951
26	24	4.03	2.01	0.50	902	3.78	1.89	0.50	943	3.57	1.79	0.50	984
26	26	4.24	1.61	0.38	935	3.99	1.52	0.38	976	3.75	1.42	0.38	1017
27	18	3.43	3.09	0.90	804	3.15	2.84	0.90	853	2.91	2.61	0.90	886
27	20	3.61	2.81	0.78	836	3.36	2.62	0.78	877	3.12	2.43	0.78	927
27	22	3.82	2.52	0.66	869	3.57	2.36	0.66	918	3.33	2.19	0.66	951
27	24	4.03	2.17	0.54	902	3.78	2.04	0.54	943	3.57	1.93	0.54	984
27	26	4.24	1.78	0.42	935	3.99	1.68	0.42	976	3.75	1.57	0.42	1017
28	18	3.43	3.22	0.94	804	3.15	2.96	0.94	853	2.91	2.73	0.94	886
28	20	3.61	2.96	0.82	836	3.36	2.76	0.82	877	3.12	2.55	0.82	927
28	22	3.82	2.67	0.70	869	3.57	2.50	0.70	918	3.33	2.33	0.70	951
28	24	4.03	2.33	0.58	902	3.78	2.19	0.58	943	3.57	2.07	0.58	984
28	26	4.24	1.95	0.46	935	3.99	1.84	0.46	976	3.75	1.72	0.46	1017
29	18	3.43	3.36	0.98	804	3.15	3.09	0.98	853	2.91	2.85	0.98	886
29	20	3.61	3.10	0.86	836	3.36	2.89	0.86	877	3.12	2.68	0.86	927
29	22	3.82	2.82	0.74	869	3.57	2.64	0.74	918	3.33	2.46	0.74	951
29	24	4.03	2.50	0.62	902	3.78	2.34	0.62	943	3.57	2.21	0.62	984
29	26	4.24	2.12	0.50	935	3.99	2.00	0.50	976	3.75	1.87	0.50	1017
30	18	3.43	3.43	1.00	804	3.15	3.15	1.00	853	2.91	2.91	1.00	886
30	20	3.61	3.24	0.90	836	3.36	3.02	0.90	877	3.12	2.80	0.90	927
30	22	3.82	2.98	0.78	869	3.57	2.78	0.78	918	3.33	2.59	0.78	951
30	24	4.03	2.66	0.66	902	3.78	2.49	0.66	943	3.57	2.36	0.66	984
30	26	4.24	2.29	0.54	935	3.99	2.15	0.54	976	3.75	2.02	0.54	1017
31	18	3.43	3.43	1.00	804	3.15	3.15	1.00	853	2.91	2.91	1.00	886
31	20	3.61	3.39	0.94	836	3.36	3.16	0.94	877	3.12	2.93	0.94	927
31	22	3.82	3.13	0.82	869	3.57	2.93	0.82	918	3.33	2.73	0.82	951
31	24	4.03	2.82	0.70	902	3.78	2.65	0.70	943	3.57	2.50	0.70	984
31	26	4.24	2.46	0.58	935	3.99	2.31	0.58	976	3.75	2.17	0.58	1017
32	18	3.43	3.43	1.00	804	3.15	3.15	1.00	853	2.91	2.91	1.00	886
32	20	3.61	3.53	0.98	836	3.36	3.29	0.98	877	3.12	3.05	0.98	927
32	22	3.82	3.28	0.86	869	3.57	3.07	0.86	918	3.33	2.86	0.86	951
32	24	4.03	2.98	0.74	902	3.78	2.80	0.74	943	3.57	2.64	0.74	984
32	26	4.24	2.63	0.62	935	3.99	2.47	0.62	976	3.75	2.32	0.62	1017

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation at Rated frequency

MUZ-FH50VEHZ

CAPACITY: 5.0 kW SHF: 0.73 INPUT: 1380 W

INDOOR DB (°C)	INDOOR WB (°C)	OUTDOOR DB (°C)															
		21				25				27				30			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	5.88	3.23	0.55	1104	5.63	3.09	0.55	1159	5.40	2.97	0.55	1214	5.20	2.86	0.55	1270
21	20	6.13	2.63	0.43	1159	5.88	2.53	0.43	1228	5.70	2.45	0.43	1256	5.50	2.37	0.43	1311
22	18	5.88	3.47	0.59	1104	5.63	3.32	0.59	1159	5.40	3.19	0.59	1214	5.20	3.07	0.59	1270
22	20	6.13	2.88	0.47	1159	5.88	2.76	0.47	1228	5.70	2.68	0.47	1256	5.50	2.59	0.47	1311
22	22	6.38	2.23	0.35	1201	6.15	2.15	0.35	1277	6.00	2.10	0.35	1311	5.75	2.01	0.35	1366
23	18	5.88	3.70	0.63	1104	5.63	3.54	0.63	1159	5.40	3.40	0.63	1214	5.20	3.28	0.63	1270
23	20	6.13	3.12	0.51	1159	5.88	3.00	0.51	1228	5.70	2.91	0.51	1256	5.50	2.81	0.51	1311
23	22	6.38	2.49	0.39	1201	6.15	2.40	0.39	1277	6.00	2.34	0.39	1311	5.75	2.24	0.39	1366
24	18	5.88	3.94	0.67	1104	5.63	3.77	0.67	1159	5.40	3.62	0.67	1214	5.20	3.48	0.67	1270
24	20	6.13	3.37	0.55	1159	5.88	3.23	0.55	1228	5.70	3.14	0.55	1256	5.50	3.03	0.55	1311
24	22	6.38	2.74	0.43	1201	6.15	2.64	0.43	1277	6.00	2.58	0.43	1311	5.75	2.47	0.43	1366
24	24	6.70	2.08	0.31	1256	6.45	2.00	0.31	1325	6.30	1.95	0.31	1366	6.10	1.89	0.31	1435
25	18	5.88	4.17	0.71	1104	5.63	3.99	0.71	1159	5.40	3.83	0.71	1214	5.20	3.69	0.71	1270
25	20	6.13	3.61	0.59	1159	5.88	3.47	0.59	1228	5.70	3.36	0.59	1256	5.50	3.25	0.59	1311
25	22	6.38	3.00	0.47	1201	6.15	2.89	0.47	1277	6.00	2.82	0.47	1311	5.75	2.70	0.47	1366
25	24	6.70	2.35	0.35	1256	6.45	2.26	0.35	1325	6.30	2.21	0.35	1366	6.10	2.14	0.35	1435
26	18	5.88	4.41	0.75	1104	5.63	4.22	0.75	1159	5.40	4.05	0.75	1214	5.20	3.90	0.75	1270
26	20	6.13	3.86	0.63	1159	5.88	3.70	0.63	1228	5.70	3.59	0.63	1256	5.50	3.47	0.63	1311
26	22	6.38	3.25	0.51	1201	6.15	3.14	0.51	1277	6.00	3.06	0.51	1311	5.75	2.93	0.51	1366
26	24	6.70	2.61	0.39	1256	6.45	2.52	0.39	1325	6.30	2.46	0.39	1366	6.10	2.38	0.39	1435
26	26	6.90	1.86	0.27	1325	6.70	1.81	0.27	1394	6.60	1.78	0.27	1435	6.40	1.73	0.27	1477
27	18	5.88	4.64	0.79	1104	5.63	4.44	0.79	1159	5.40	4.27	0.79	1214	5.20	4.11	0.79	1270
27	20	6.13	4.10	0.67	1159	5.88	3.94	0.67	1228	5.70	3.82	0.67	1256	5.50	3.69	0.67	1311
27	22	6.38	3.51	0.55	1201	6.15	3.38	0.55	1277	6.00	3.30	0.55	1311	5.75	3.16	0.55	1366
27	24	6.70	2.88	0.43	1256	6.45	2.77	0.43	1325	6.30	2.71	0.43	1366	6.10	2.62	0.43	1435
27	26	6.90	2.14	0.31	1325	6.70	2.08	0.31	1394	6.60	2.05	0.31	1435	6.40	1.98	0.31	1477
28	18	5.88	4.88	0.83	1104	5.63	4.67	0.83	1159	5.40	4.48	0.83	1214	5.20	4.32	0.83	1270
28	20	6.13	4.35	0.71	1159	5.88	4.17	0.71	1228	5.70	4.05	0.71	1256	5.50	3.91	0.71	1311
28	22	6.38	3.76	0.59	1201	6.15	3.63	0.59	1277	6.00	3.54	0.59	1311	5.75	3.39	0.59	1366
28	24	6.70	3.15	0.47	1256	6.45	3.03	0.47	1325	6.30	2.96	0.47	1366	6.10	2.87	0.47	1435
28	26	6.90	2.42	0.35	1325	6.70	2.35	0.35	1394	6.60	2.31	0.35	1435	6.40	2.24	0.35	1477
29	18	5.88	5.11	0.87	1104	5.63	4.89	0.87	1159	5.40	4.70	0.87	1214	5.20	4.52	0.87	1270
29	20	6.13	4.59	0.75	1159	5.88	4.41	0.75	1228	5.70	4.28	0.75	1256	5.50	4.13	0.75	1311
29	22	6.38	4.02	0.63	1201	6.15	3.87	0.63	1277	6.00	3.78	0.63	1311	5.75	3.62	0.63	1366
29	24	6.70	3.42	0.51	1256	6.45	3.29	0.51	1325	6.30	3.21	0.51	1366	6.10	3.11	0.51	1435
29	26	6.90	2.69	0.39	1325	6.70	2.61	0.39	1394	6.60	2.57	0.39	1435	6.40	2.50	0.39	1477
30	18	5.88	5.35	0.91	1104	5.63	5.12	0.91	1159	5.40	4.91	0.91	1214	5.20	4.73	0.91	1270
30	20	6.13	4.84	0.79	1159	5.88	4.64	0.79	1228	5.70	4.50	0.79	1256	5.50	4.35	0.79	1311
30	22	6.38	4.27	0.67	1201	6.15	4.12	0.67	1277	6.00	4.02	0.67	1311	5.75	3.85	0.67	1366
30	24	6.70	3.69	0.55	1256	6.45	3.55	0.55	1325	6.30	3.47	0.55	1366	6.10	3.36	0.55	1435
30	26	6.90	2.97	0.43	1325	6.70	2.88	0.43	1394	6.60	2.84	0.43	1435	6.40	2.75	0.43	1477
31	18	5.88	5.58	0.95	1104	5.63	5.34	0.95	1159	5.40	5.13	0.95	1214	5.20	4.94	0.95	1270
31	20	6.13	5.08	0.83	1159	5.88	4.88	0.83	1228	5.70	4.73	0.83	1256	5.50	4.57	0.83	1311
31	22	6.38	4.53	0.71	1201	6.15	4.37	0.71	1277	6.00	4.26	0.71	1311	5.75	4.08	0.71	1366
31	24	6.70	3.95	0.59	1256	6.45	3.81	0.59	1325	6.30	3.72	0.59	1366	6.10	3.60	0.59	1435
31	26	6.90	3.24	0.47	1325	6.70	3.15	0.47	1394	6.60	3.10	0.47	1435	6.40	3.01	0.47	1477
32	18	5.88	5.82	0.99	1104	5.63	5.57	0.99	1159	5.40	5.35	0.99	1214	5.20	5.15	0.99	1270
32	20	6.13	5.33	0.87	1159	5.88	5.11	0.87	1228	5.70	4.96	0.87	1256	5.50	4.79	0.87	1311
32	22	6.38	4.78	0.75	1201	6.15	4.61	0.75	1277	6.00	4.50	0.75	1311	5.75	4.31	0.75	1366
32	24	6.70	4.22	0.63	1256	6.45	4.06	0.63	1325	6.30	3.97	0.63	1366	6.10	3.84	0.63	1435
32	26	6.90	3.52	0.51	1325	6.70	3.42	0.51	1394	6.60	3.37	0.51	1435	6.40	3.26	0.51	1477

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA COOL operation at Rated frequency

MUZ-FH50VEHZ

CAPACITY: 5.0 kW SHF: 0.73 INPUT: 1380 W

INDOOR DB (°C)	INDOOR WB (°C)	OUTDOOR DB (°C)											
		35				40				46			
		Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT	Q	SHC	SHF	INPUT
21	18	4.90	2.70	0.55	1352	4.50	2.48	0.55	1435	4.15	2.28	0.55	1490
21	20	5.15	2.21	0.43	1408	4.80	2.06	0.43	1477	4.45	1.91	0.43	1559
22	18	4.90	2.89	0.59	1352	4.50	2.66	0.59	1435	4.15	2.45	0.59	1490
22	20	5.15	2.42	0.47	1408	4.80	2.26	0.47	1477	4.45	2.09	0.47	1559
22	22	5.45	1.91	0.35	1463	5.10	1.79	0.35	1546	4.75	1.66	0.35	1601
23	18	4.90	3.09	0.63	1352	4.50	2.84	0.63	1435	4.15	2.61	0.63	1490
23	20	5.15	2.63	0.51	1408	4.80	2.45	0.51	1477	4.45	2.27	0.51	1559
23	22	5.45	2.13	0.39	1463	5.10	1.99	0.39	1546	4.75	1.85	0.39	1601
24	18	4.90	3.28	0.67	1352	4.50	3.02	0.67	1435	4.15	2.78	0.67	1490
24	20	5.15	2.83	0.55	1408	4.80	2.64	0.55	1477	4.45	2.45	0.55	1559
24	22	5.45	2.34	0.43	1463	5.10	2.19	0.43	1546	4.75	2.04	0.43	1601
24	24	5.75	1.78	0.31	1518	5.40	1.67	0.31	1587	5.10	1.58	0.31	1656
25	18	4.90	3.48	0.71	1352	4.50	3.20	0.71	1435	4.15	2.95	0.71	1490
25	20	5.15	3.04	0.59	1408	4.80	2.83	0.59	1477	4.45	2.63	0.59	1559
25	22	5.45	2.56	0.47	1463	5.10	2.40	0.47	1546	4.75	2.23	0.47	1601
25	24	5.75	2.01	0.35	1518	5.40	1.89	0.35	1587	5.10	1.79	0.35	1656
26	18	4.90	3.68	0.75	1352	4.50	3.38	0.75	1435	4.15	3.11	0.75	1490
26	20	5.15	3.24	0.63	1408	4.80	3.02	0.63	1477	4.45	2.80	0.63	1559
26	22	5.45	2.78	0.51	1463	5.10	2.60	0.51	1546	4.75	2.42	0.51	1601
26	24	5.75	2.24	0.39	1518	5.40	2.11	0.39	1587	5.10	1.99	0.39	1656
26	26	6.05	1.63	0.27	1573	5.70	1.54	0.27	1642	5.35	1.44	0.27	1711
27	18	4.90	3.87	0.79	1352	4.50	3.56	0.79	1435	4.15	3.28	0.79	1490
27	20	5.15	3.45	0.67	1408	4.80	3.22	0.67	1477	4.45	2.98	0.67	1559
27	22	5.45	3.00	0.55	1463	5.10	2.81	0.55	1546	4.75	2.61	0.55	1601
27	24	5.75	2.47	0.43	1518	5.40	2.32	0.43	1587	5.10	2.19	0.43	1656
27	26	6.05	1.88	0.31	1573	5.70	1.77	0.31	1642	5.35	1.66	0.31	1711
28	18	4.90	4.07	0.83	1352	4.50	3.74	0.83	1435	4.15	3.44	0.83	1490
28	20	5.15	3.66	0.71	1408	4.80	3.41	0.71	1477	4.45	3.16	0.71	1559
28	22	5.45	3.22	0.59	1463	5.10	3.01	0.59	1546	4.75	2.80	0.59	1601
28	24	5.75	2.70	0.47	1518	5.40	2.54	0.47	1587	5.10	2.40	0.47	1656
28	26	6.05	2.12	0.35	1573	5.70	2.00	0.35	1642	5.35	1.87	0.35	1711
29	18	4.90	4.26	0.87	1352	4.50	3.92	0.87	1435	4.15	3.61	0.87	1490
29	20	5.15	3.86	0.75	1408	4.80	3.60	0.75	1477	4.45	3.34	0.75	1559
29	22	5.45	3.43	0.63	1463	5.10	3.21	0.63	1546	4.75	2.99	0.63	1601
29	24	5.75	2.93	0.51	1518	5.40	2.75	0.51	1587	5.10	2.60	0.51	1656
29	26	6.05	2.36	0.39	1573	5.70	2.22	0.39	1642	5.35	2.09	0.39	1711
30	18	4.90	4.46	0.91	1352	4.50	4.10	0.91	1435	4.15	3.78	0.91	1490
30	20	5.15	4.07	0.79	1408	4.80	3.79	0.79	1477	4.45	3.52	0.79	1559
30	22	5.45	3.65	0.67	1463	5.10	3.42	0.67	1546	4.75	3.18	0.67	1601
30	24	5.75	3.16	0.55	1518	5.40	2.97	0.55	1587	5.10	2.81	0.55	1656
30	26	6.05	2.60	0.43	1573	5.70	2.45	0.43	1642	5.35	2.30	0.43	1711
31	18	4.90	4.66	0.95	1352	4.50	4.28	0.95	1435	4.15	3.94	0.95	1490
31	20	5.15	4.27	0.83	1408	4.80	3.98	0.83	1477	4.45	3.69	0.83	1559
31	22	5.45	3.87	0.71	1463	5.10	3.62	0.71	1546	4.75	3.37	0.71	1601
31	24	5.75	3.39	0.59	1518	5.40	3.19	0.59	1587	5.10	3.01	0.59	1656
31	26	6.05	2.84	0.47	1573	5.70	2.68	0.47	1642	5.35	2.51	0.47	1711
32	18	4.90	4.85	0.99	1352	4.50	4.46	0.99	1435	4.15	4.11	0.99	1490
32	20	5.15	4.48	0.87	1408	4.80	4.18	0.87	1477	4.45	3.87	0.87	1559
32	22	5.45	4.09	0.75	1463	5.10	3.83	0.75	1546	4.75	3.56	0.75	1601
32	24	5.75	3.62	0.63	1518	5.40	3.40	0.63	1587	5.10	3.21	0.63	1656
32	26	6.05	3.09	0.51	1573	5.70	2.91	0.51	1642	5.35	2.73	0.51	1711

NOTE Q : Total capacity (kW) SHF : Sensible heat factor DB : Dry-bulb temperature
SHC : Sensible heat capacity (kW) INPUT : Total power input (W) WB : Wet-bulb temperature

PERFORMANCE DATA HEAT operation at Rated frequency

MUZ-FH25VEHZ

CAPACITY: 3.2 kW INPUT: 580 W

INDOOR DB (°C)	OUTDOOR WB (°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.02	377	2.43	452	2.85	510	3.26	551	3.68	586	4.06	603	4.48	615
21	1.92	406	2.30	481	2.72	534	3.10	574	3.52	603	3.90	621	4.30	644
26	1.73	435	2.14	510	2.53	563	2.94	603	3.36	632	3.74	650	4.16	667

MUZ-FH35VEHZ

CAPACITY: 4.0 kW INPUT: 800 W

INDOOR DB (°C)	OUTDOOR WB (°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	2.52	520	3.04	624	3.56	704	4.08	760	4.60	808	5.08	832	5.60	848
21	2.40	560	2.88	664	3.40	736	3.88	792	4.40	832	4.88	856	5.38	888
26	2.16	600	2.68	704	3.16	776	3.68	832	4.20	872	4.68	896	5.20	920

MUZ-FH50VEHZ

CAPACITY: 6.0 kW INPUT: 1480 W

INDOOR DB (°C)	OUTDOOR WB (°C)													
	-10		-5		0		5		10		15		20	
	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT	Q	INPUT
15	3.78	962	4.56	1154	5.34	1302	6.12	1406	6.90	1495	7.62	1539	8.40	1569
21	3.60	1036	4.32	1228	5.10	1362	5.82	1465	6.60	1539	7.32	1584	8.07	1643
26	3.24	1110	4.02	1302	4.74	1436	5.52	1539	6.30	1613	7.02	1658	7.80	1702

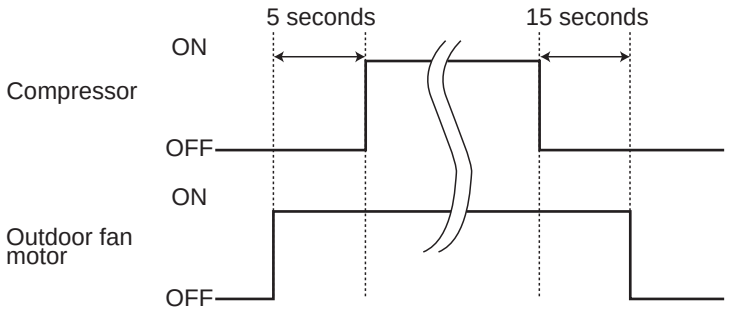
NOTE: Q: Total capacity (kW) INPUT : Total power input (W) DB: Dry-bulb temperature WB: Wet-bulb temperature

9 ACTUATOR CONTROL

MUZ-FH25VEHZ
MUZ-FH35VEHZ
MUZ-FH50VEHZ

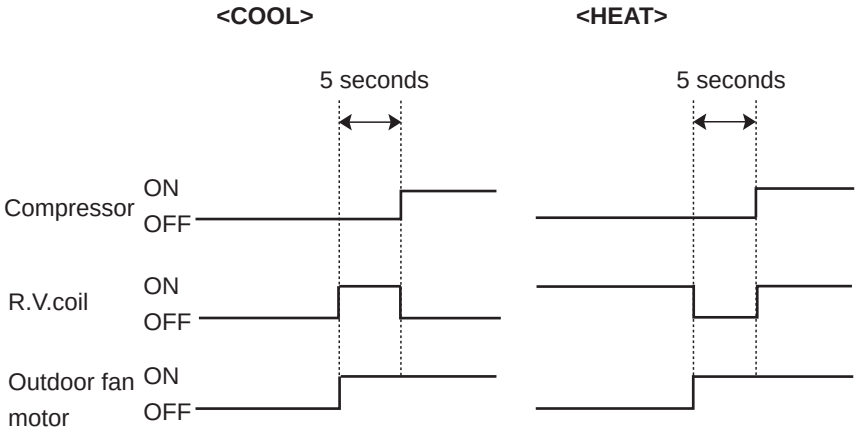
9-1. OUTDOOR FAN MOTOR CONTROL

The fan motor turns ON/OFF, interlocking with the compressor.
[ON] The fan motor turns ON 5 seconds before the compressor starts up.
[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.



9-2. R.V. COIL CONTROL

Heating · · · · · · · · · · · · · · · · · ON
Cooling · · · · · · · · · · · · · · · · · OFF
Dry · · · · · · · · · · · · · · · · · · · OFF
NOTE: The 4-way valve reverses for 5 seconds right before start-up of the compressor.



9-3. RELATION BETWEEN MAIN SENSOR AND ACTUATOR

Sensor	Purpose	Actuator					
		Compressor	LEV	Outdoor fan motor	R.V.coil	Indoor fan motor	Defrost heater
Discharge temperature thermistor	Protection	○	○				
Indoor coil temperature thermistor	Cooling: Coil frost prevention	○					
	Heating: High pressure protection	○	○				
Defrost thermistor	Heating: Defrosting	○	○	○	○	○	
Fin temperature thermistor	Protection	○		○			
Ambient temperature thermistor	Cooling: Low ambient temperature operation	○	○	○			
	Heating: Defrosting (Heater)						○
Outdoor heat exchanger temperature thermistor	Cooling: Low ambient temperature operation	○	○	○			
	Cooling: High pressure protection	○	○	○			

10 SERVICE FUNCTIONS

MUZ-FH25VEHZ
MUZ-FH35VEHZ
MUZ-FH50VEHZ

10-1. CHANGE IN DEFROST SETTING

Changing defrost finish temperature

<JS> To change the defrost finish temperature, cut/solder the JS wire of the outdoor inverter P.C. board. (Refer to 11-6-1.)

Jumper wire		Defrost finish temperature (°C)	
		MUZ-FH25/35VEHZ	MUZ-FH50VEHZ
JS	Soldered (Initial setting)	8	10
	None (Cut)	15	18

10-2. PRE-HEAT CONTROL SETTING

PRE-HEAT CONTROL

MUZ-FH25/35

When moisture gets into the refrigerant cycle, it may interfere the start-up of the compressor at low outside temperature. The pre-heat control prevents this interference. The pre-heat control turns ON when the discharge temperature thermistor is 20°C or below. When the pre-heat control turns ON, the compressor is energized. (About 50 W)

MUZ-FH50

Prolonged low load operation, in which the thermostat is OFF for a long time, at low outside temperature (0°C or less) may cause the following troubles. To prevent those troubles, activate the pre-heat control.

1) If moisture gets into the refrigerant cycle and freezes, it may interfere the start-up of the compressor.
2) If liquid refrigerant collects in the compressor, a failure in the compressor may occur.

The pre-heat control turns ON when the compressor temperature is 20°C or below. When the pre-heat control turns ON, the compressor is energized. (About 70 W)

Pre-heat control setting

<JK>

ON: To activate the pre-heat control, cut JK wire of the inverter P.C. board.

OFF: To deactivate the pre-heat control, solder JK wire of the inverter P.C. board.

(Refer to 11-6.1)

NOTE: When the inverter P.C. board is replaced, check the jumper wires, and cut/solder them if necessary.

11 TROUBLESHOOTING

MUZ-FH25VEHZ
MUZ-FH35VEHZ
MUZ-FH50VEHZ

11-1. CAUTIONS ON TROUBLESHOOTING

1. Before troubleshooting, check the following

1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for miswiring.

2. Take care of the following during servicing

1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and then after confirming the horizontal vane is closed, turn OFF the breaker and/or disconnect the power plug.
2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
3) When removing the electrical parts, be careful of the residual voltage of smoothing capacitor.
4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
5) When connecting or disconnecting the connectors, hold the connector housing. DO NOT pull the lead wires.

<Incorrect> <Correct>

Lead wiring **Connector housing**

3. Troubleshooting procedure

1) Check if the OPERATION INDICATOR lamp on the indoor unit is flashing on and off to indicate an abnormality.
To make sure, check how many times the OPERATION INDICATOR lamp is flashing on and off before starting service work.
2) Before servicing, check that the connector and terminal are connected properly.
3) When the electronic control P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
4) Refer to 11-2 and 11-3.

11-2. FAILURE MODE RECALL FUNCTION

Outline of the function

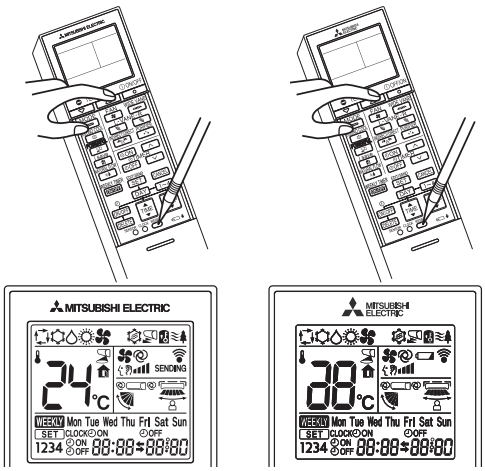
This air conditioner can memorize the abnormal condition which has occurred once.

Even though LED indication listed on the troubleshooting check table (11-3.) disappears, the memorized failure details can be recalled.

1. Flow chart of failure mode recall function for the indoor/outdoor unit

MSZ-FH25VE
MSZ-FH35VE
MSZ-FH50VE

MSZ-FH25VE2
MSZ-FH35VE2
MSZ-FH50VE2



Operational procedure

The cause of abnormality cannot be found because the abnormality does not recur.

Setting up the failure mode recall function

Turn ON the power supply.
<Preparation of the remote controller>
① While pressing OPERATION SELECT button and TEMP ⊕ button on the remote controller at the same time, press RESET button.
② First, release RESET button.
Hold down the other 2 buttons for another 3 seconds. Make sure that the indicators on the LCD screen shown in the right figure are all displayed. Then release the buttons.

Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1

※1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

Does POWER lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: Either indoor or outdoor unit is abnormal. Beep is emitted at the same timing as the blinking of POWER lamp. ※2

No (OFF) → Indoor unit is normal.
But the outdoor unit might be abnormal because there are some abnormalities that cannot be recalled with this way.
Check if outdoor unit is abnormal according to the detailed outdoor unit failure mode recall function. (Refer to 11-2.2)

Yes (Blinks)

Judgment of indoor/outdoor abnormality

Before blinking, does POWER lamp stay ON for 3 seconds?
When it stays ON for 3 seconds (without beep):
The outdoor unit is abnormal.

Yes → The outdoor unit is abnormal.
Check the blinking pattern, and identify the abnormal point by referring to the outdoor unit failure mode table. (Refer to 11-2.3)
Make sure to check at least 2 consecutive blinking cycles. ※3

No → The indoor unit is abnormal.
Check the blinking pattern, and identify the abnormal point by referring to the indoor unit failure mode table. (Refer to indoor unit service manual.)
Make sure to check at least 2 consecutive blinking cycles. ※2

Releasing the failure mode recall function

Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

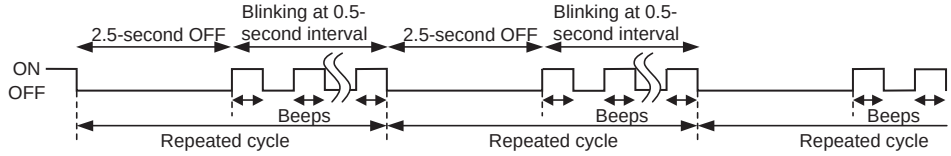
Repair the failure parts.

Deleting the memorized abnormal condition

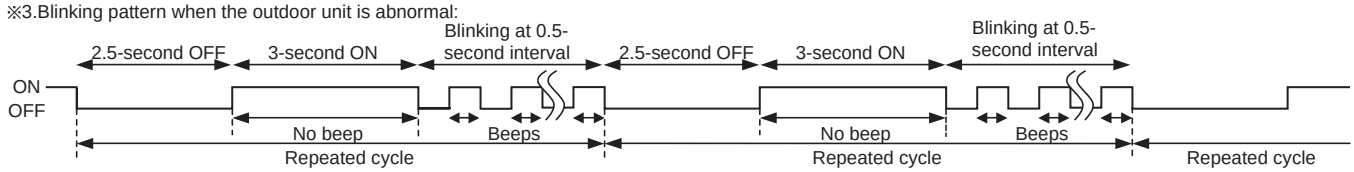
① After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" mentioned above.
② Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③ Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted.
④ Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

NOTE: 1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2. Blinking pattern when the indoor unit is abnormal:



※3.Blinking pattern when the outdoor unit is abnormal:



2. Flow chart of the detailed outdoor unit failure mode recall function

Operational procedure

The outdoor unit might be abnormal.
Check if outdoor unit is abnormal according to the following procedures.

↓

Make sure that the remote controller is set to the failure mode recall function.

↓

With the remote controller headed towards the indoor unit, press TEMP ⊕ button to adjust the set temperature to 25°C. ※1

※1. Regardless of normal or abnormal condition, 2 short beeps are emitted as the signal is received.

NOTE: It takes up to 1 minute to indicate the outdoor unit abnormality.
Even if POWER lamp is not lighting, keep checking at least 1 minute or longer.

↓

Does POWER lamp on the indoor unit blink at the interval of 0.5 seconds?
Blinks: The outdoor unit is abnormal. Beep is emitted at the same timing as the blinking of POWER lamp. ※2

No (OFF) → The outdoor unit is normal.

→ Release the failure mode recall function according to the left mentioned procedure.

Yes (Blinks)

↓

The outdoor unit is abnormal.
Check the blinking pattern, and identify the abnormal point by referring to the outdoor unit failure mode table (11-2.3.).
Make sure to check at least 2 consecutive blinking cycles. ※2

↓

Releasing the failure mode recall function

Release the failure mode recall function by the following procedures.
Turn OFF the power supply and turn it ON again.
Press RESET button of the remote controller.

↓

Repair the failure parts.

↓

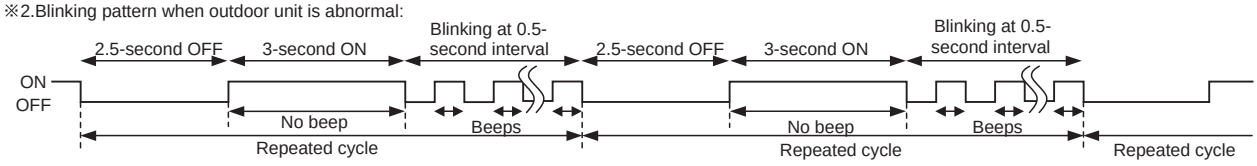
Deleting the memorized abnormal condition

① After repairing the unit, recall the failure mode again according to "Setting up the failure mode recall function" (11-2.1.).
② Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.
③ Press EMERGENCY OPERATION switch so that the memorized abnormal condition is deleted. ※4
④ Release the failure mode recall function according to "Releasing the failure mode recall function" mentioned above.

※4 The information regarding whether the connected outdoor unit is a low-standby-power model or a non-low-standby-power model will also be initialized.
(Default= compatible with a low-standby-power model)

NOTE: 1. Make sure to release the failure mode recall function after it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

※2.Blinking pattern when outdoor unit is abnormal:



3. Outdoor unit failure mode table

POWER lamp (Indoor unit)	Abnormal point (Failure mode/protection)	LED indication (Outdoor P.C. board)	Condition	Remedy	Indoor/outdoor unit failure mode recall function	Outdoor unit failure mode recall function
OFF	None (Normal)	—	—	—	—	—
1-time flash 2.5 seconds OFF	Indoor/outdoor communication, receiving error	—	Any signals from the inverter P.C. board cannot be received normally for 3 minutes.	•Refer to 11-5. Ⓜ How to check miswiring and serial signal error.	○	○
	Indoor/outdoor communication, receiving error	—	Although the inverter P.C. board sends signal "0", signal "1" has been received 30 consecutive times.	•Refer to 11-5. Ⓜ How to check miswiring and serial signal error.		
2-time flash 2.5 seconds OFF	Outdoor power system	—	Overcurrent protection cut-out operates 3 consecutive times within 1 minute after the compressor gets started.	•Reconnect connectors. •Refer to 11-5. Ⓐ"How to check inverter/ compressor". •Check stop valve.	○	○
3-time flash 2.5 seconds OFF	Discharge temperature thermistor	1-time flash every 2.5 seconds	Thermistor shorts or opens during compressor running.	•Refer to 11-5.Ⓖ "Check of outdoor thermistors". Defective outdoor thermistors can be identified by checking the blinking pattern of LED.	○	○
	Defrost thermistor					
	Fin temperature thermistor	3-time flash 2.5 seconds OFF				
	P.C. board temperature thermistor	4-time flash 2.5 seconds OFF				
	Ambient temperature thermistor	2-time flash 2.5 seconds OFF				
	Outdoor heat exchanger temperature thermistor	—				
4-time flash 2.5 seconds OFF	Overcurrent	11-time flash 2.5 seconds OFF	Large current flows into power module (IC700) (**FH25/35**)/ IGBT module (IC700) (**FH50**).	•Reconnect compressor connector. •Refer to 11-5.Ⓐ"How to check inverter/ compressor". •Check stop valve.	—	○
	Compressor synchronous abnormality (Compressor start-up failure protection)	12-time flash 2.5 seconds OFF	Waveform of compressor current is distorted.	•Reconnect compressor connector. •Refer to 11-5.Ⓐ"How to check inverter/ compressor".	—	○
5-time flash 2.5 seconds OFF	Discharge temperature	—	Temperature of discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.	•Check refrigerant circuit and refrigerant amount. •Refer to 11-5.Ⓚ"Check of LEV".	—	○
6-time flash 2.5 seconds OFF	High pressure	—	Temperature of indoor coil thermistor exceeds 70°C in HEAT mode. Temperature of defrost thermistor exceeds 70°C in COOL mode.	•Check refrigerant circuit and refrigerant amount. •Check stop valve.	—	○
7-time flash 2.5 seconds OFF	Fin temperature/ P.C. board temperature	7-time flash 2.5 seconds OFF	Temperature of the fin temperature thermistor on the inverter P.C. board exceeds 75 ~ 86°C (**FH25/35**)/75 ~ 80°C (**FH50**), or temperature of P.C. board temperature thermistor on the inverter P.C. board exceeds 72 ~ 85°C (**FH25/35**)/70 ~ 75°C (**FH50**).	•Check around outdoor unit. •Check outdoor unit air passage. •Refer to 11-5.Ⓘ"Check of outdoor fan motor".	—	○
8-time flash 2.5 seconds OFF	Outdoor fan motor	—	Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.	•Refer to 11-5.Ⓘ"Check of outdoor fan motor". Refer to 11-5.Ⓛ"Check of inverter P.C. board".	—	○
9-time flash 2.5 seconds OFF	Nonvolatile memory data	5-time flash 2.5 seconds OFF	Nonvolatile memory data cannot be read properly.	•Replace the inverter P.C. board.	○	○
	Power module (IC700) (**FH25/35**) IGBT module (IC700) (**FH50**)	6-time flash 2.5 seconds OFF	The interface short circuit occurs in the output of the power module (IC700) (**FH25/35**)/IGBT module (IC700) (**FH50**). The compressor winding shorts circuit.	•Refer to 11-5. Ⓐ"How to check inverter/ compressor".		

NOTE: Blinking patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (11-3.).

POWER lamp (Indoor unit)	Abnormal point (Failure mode/protection)	LED indication (Outdoor P.C. board)	Condition	Remedy	Indoor/outdoor unit failure mode recall function	Outdoor unit failure mode recall function
10-time flash 2.5 seconds OFF	Discharge temperature	—	Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes.	•Refer to 11-5.Ⓚ"Check of LEV". •Check refrigerant circuit and refrigerant amount.	—	○
11-time flash 2.5 seconds OFF	Bus-bar voltage (DC)	8-time flash 2.5 seconds OFF	Bus-bar voltage of inverter cannot be detected normally.	•Refer to 11-5.Ⓐ"How to check inverter/ compressor".	—	○
	Each phase current of compressor	9-time flash 2.5 seconds OFF	Each phase current of compressor cannot be detected normally.			
14-time flash or more 2.5 seconds OFF	Stop valve (Closed valve)	14-time flash 2.5 seconds OFF	Closed valve is detected by compressor current.	•Check stop valve.	○	○
	4-way valve/ Pipe temperature	16-time flash 2.5 seconds OFF	The 4-way valve does not work properly. The indoor coil thermistor detects an abnormal temperature.	•Check the 4-way valve. •Replace the inverter P.C. board.		
	Outdoor refrigerant system abnormality	17-time flash 2.5 seconds OFF	A closed valve and air trapped in the refrigerant circuit are detected based on the temperature sensed by the indoor and outdoor thermistors and the current of the compressor.	•Check for a gas leak in a connecting piping etc. •Check the stop valve. •Refer to 11-5. Ⓞ "Check of outdoor refrigerant circuit".	○	○

NOTE: Blinking patterns of this mode differ from the ones of TROUBLESHOOTING CHECK TABLE (11-3.).

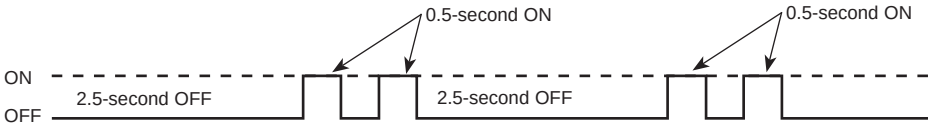
11-3. TROUBLESHOOTING CHECK TABLE

No.	Symptom	LED indication	Abnormal point/ Condition	Condition	Remedy
1	Outdoor unit does not operate.	1-time flash every 2.5 seconds	Outdoor power system	Overcurrent protection cut-out operates 3 consecutive times within 1 minute after the compressor gets started.	•Reconnect connector of compressor. •Refer to 11-5.Ⓐ "How to check inverter/compressor". •Check stop valve.
2			Outdoor thermistors	Discharge temperature thermistor, fin temperature thermistor, defrost thermistor, P.C. board temperature thermistor, outdoor heat exchanger temperature thermistor or ambient temperature thermistor shorts or opens during compressor running.	•Refer to 11-5.Ⓖ "Check of outdoor thermistors".
3			Outdoor control system	Nonvolatile memory data cannot be read properly. (POWER lamp of the indoor unit lights up or flashes 7-time.)	•Replace inverter P.C. board.
4		6-time flash 2.5 seconds OFF	Serial signal	The communication fails between the indoor and outdoor unit for 3 minutes.	•Check connection between the inverter P.C. board and the relay P.C. board. (**FH50**) •Refer to 11-5.Ⓜ "How to check miswiring and serial signal error.
5		11-time flash 2.5 seconds OFF	Stop valve/ Closed valve	Closed valve is detected by compressor current.	•Check stop valve.
6		16-time flash 2.5 seconds OFF	4-way valve/ Pipe temperature	The 4-way valve does not work properly. The indoor coil thermistor detects an abnormal temperature.	•Refer to 11-5.Ⓗ "Check of R.V. coil". •Replace the inverter P.C. board.
7		17-time flash 2.5 seconds OFF	Outdoor refrigerant system abnormality	A closed valve and air trapped in the refrigerant circuit are detected based on the temperature sensed by the indoor and outdoor thermistors and the current of the compressor.	•Check for a gas leak in a connecting piping etc. •Check the stop valve. •Refer to 11-5. Ⓞ "Check of outdoor refrigerant circuit".
8	'Outdoor unit stops and restarts 3 minutes later' is repeated.	2-time flash 2.5 seconds OFF	Overcurrent protection	Large current flows into power module (IC700) (**FH25/35**)/ IGBT module (IC700) (**FH50**).	•Reconnect connector of compressor. •Refer to 11-5.Ⓐ "How to check inverter/compressor". •Check stop valve.
9		3-time flash 2.5 seconds OFF	Discharge temperature overheat protection	Temperature of discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.	•Check refrigerant circuit and refrigerant amount. •Refer to 11-5.Ⓚ "Check of LEV".
10		4-time flash 2.5 seconds OFF	Fin temperature / P.C. board temperature thermistor overheat protection	Temperature of the fin temperature thermistor on the heat sink exceeds 75 ~ 86°C (**FH25/35**)/75 ~ 80°C (**FH50**) or temperature of P.C. board temperature thermistor on the inverter P.C.board exceeds 72 ~ 85°C (**FH25/35**)/70 ~ 75°C (**FH50**).	•Check around outdoor unit. •Check outdoor unit air passage. •Refer to 11-5.Ⓘ "Check of outdoor fan motor".
11		5-time flash 2.5 seconds OFF	High pressure protection	Indoor coil thermistor exceeds 70°C in HEAT mode. Defrost thermistor exceeds 70°C in COOL mode.	•Check refrigerant circuit and refrigerant amount. •Check stop valve.
12		8-time flash 2.5 seconds OFF	Compressor synchronous abnormality	The waveform of compressor current is distorted.	•Reconnect connector of compressor. •Refer to 11-5.Ⓐ "How to check inverter/compressor".
13		10-time flash 2.5 seconds OFF	Outdoor fan motor	Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.	•Refer to 11-5.Ⓘ "Check of outdoor fan motor. •Refer to 11-5.Ⓛ "Check of inverter P.C. board.
14		12-time flash 2.5 seconds OFF	Each phase current of compressor	Each phase current of compressor cannot be detected normally.	•Refer to 11-5.Ⓐ "How to check inverter/compressor".
15		13-time flash 2.5 seconds OFF	Bus-bar voltage (DC)	Bus-bar voltage of inverter cannot be detected normally.	•It occurs with following case. Instantaneous power voltage drop. (Short time power failure) (**FH50**) •Refer to 11-5. Ⓙ "Check of power supply". (**FH50**) •Refer to 11-5.Ⓐ "How to check inverter/compressor".
16	Outdoor unit operates.	1-time flash 2.5 seconds OFF	Frequency drop by current protection	**FH25/35**: When the input current exceeds approximately 10A (**FH25**)/10.5A (**FH35**), compressor frequency lowers. **FH50**: Current from power outlet is nearing breaker capacity.	The unit is normal, but check the following. •Check if indoor filters are clogged. •Check if refrigerant is short. •Check if indoor/outdoor unit air circulation is short cycled.
17		3-time flash 2.5 seconds OFF	Frequency drop by high pressure protection	Temperature of indoor coil thermistor exceeds 55°C in HEAT mode, compressor frequency lowers.	
			Frequency drop by defrosting in COOL mode	Indoor coil thermistor reads 8°C or less in COOL mode, compressor frequency lowers.	
18		4-time flash 2.5 seconds OFF	Frequency drop by discharge temperature protection	Temperature of discharge temperature thermistor exceeds 111°C, compressor frequency lowers.	•Check refrigerant circuit and refrigerant amount. •Refer to 11-5.Ⓚ "Check of LEV". •Refer to 11-5.Ⓖ "Check of outdoor thermistors".
19		**MUZ-FH25/35** 5-time flash 2.5 seconds OFF	Outside temperature thermistor protection	When the outside temperature thermistor shorts or opens, protective operation without that thermistor is performed.	•Refer to 11-5. Ⓖ Check of outdoor thermistors.

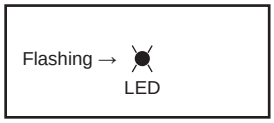
No.	Symptom	LED indication	Abnormal point/ Condition	Condition	Remedy
20	Outdoor unit operates.	7-time flash 2.5 seconds OFF	Low discharge temperature protection	Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes.	•Refer to 11-5.Ⓚ "Check of LEV". •Check refrigerant circuit and refrigerant amount.
21		8-time flash 2.5 seconds OFF	**MUZ-FH25/35** PAM protection PAM: Pulse Amplitude Modulation	The overcurrent flows into PFC (Power factor correction :IC820) or the bus-bar voltage reaches 394 V or more, PAM stops and restarts.	This is not malfunction. PAM protection will be activated in the following cases: 1 Instantaneous power voltage drop. (Short time power failure) 2 When the power supply voltage is high.
			MUZ-FH50 Zero cross detecting circuit	Zero cross signal cannot be detected.	•It occurs with following cases. 1 Instantaneous power voltage drop. (Short time power failure) 2 Distortion of primary voltage •Refer to 11-5. Ⓙ "Check of power supply".
22		9-time flash 2.5 seconds OFF	Inverter check mode	The connector of compressor is disconnected, inverter check mode starts.	•Check if the connector of the compressor is correctly connected. Refer to 11-5.Ⓐ "How to check inverter/compressor".

NOTE: 1. The location of LED is illustrated at the right figure. Refer to 11-6.1.
2. LED is lighted during normal operation.

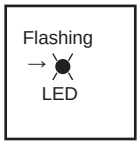
The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.
(Example) When the flashing frequency is “2”.



Inverter P.C. board
MUZ-FH25/35VEHZ



MUZ-FH50VEHZ



11-4. TROUBLE CRITERION OF MAIN PARTS

MUZ-FH25VEHZ
MUZ-FH35VEHZ
MUZ-FH50VEHZ

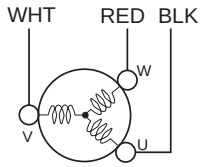
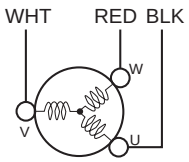
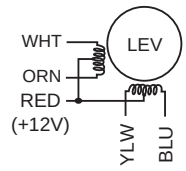
<table>
<tr><th>Part name</th><th>Check method and criterion</th><th>Figure</th></tr>
<tr><td>Defrost thermistor (RT61)

Fin temperature thermistor (RT64)

Ambient temperature thermistor (RT65)

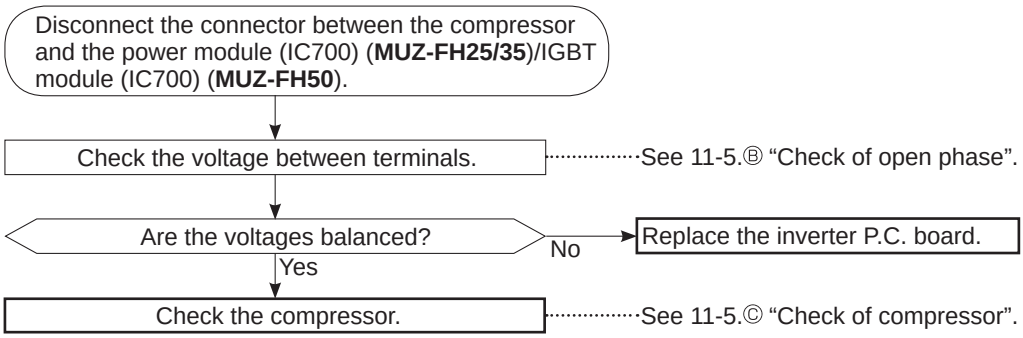
Outdoor heat exchanger temperature thermistor (RT68)</td><td>Measure the resistance with a tester.

Refer to 11-6. “Test point diagram and voltage”, 1. “Inverter P.C. board”, for the chart of thermistor.</td><td></td></tr>
<tr><td>Discharge temperature thermistor (RT62)</td><td>Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up.

Refer to 11-6. “Test point diagram and voltage”, 1. “Inverter P.C. board”, for the chart of thermistor.</td><td></td></tr>
<tr><td>Compressor</td><td>Measure the resistance between terminals using a tester. (Temperature: -10 ~ 40°C)
<table>
<tr><th rowspan="2"></th><th colspan="2">Normal (Ω)</th></tr>
<tr><th>MUZ-FH25/35VEHZ</th><th>MUZ-FH50VEHZ</th></tr>
<tr><td>U-V
U-W
V-W</td><td>1.66 ~ 2.26</td><td>0.87 ~ 1.18</td></tr>
</table></td><td> 
</td></tr>
<tr><td>Outdoor fan motor</td><td>Measure the resistance between lead wires using a tester. (Temperature: -10 ~ 40°C)
<table>
<tr><th rowspan="2">Color of lead wire</th><th colspan="2">Normal (Ω)</th></tr>
<tr><th>MUZ-FH25/35VEHZ</th><th>MUZ-FH50VEHZ</th></tr>
<tr><td>RED – BLK
BLK – WHT
WHT – RED</td><td>12 ~ 16</td><td>12 ~ 17</td></tr>
</table></td><td> 
</td></tr>
<tr><td>R.V. coil (21S4)</td><td>Measure the resistance using a tester. (Temperature: -10 ~ 40°C)
<table>
<tr><th colspan="2">Normal (kΩ)</th></tr>
<tr><th>MUZ-FH25/35VEHZ</th><th>MUZ-FH50VEHZ</th></tr>
<tr><td>1.41 ~ 2.00</td><td>1.19 ~ 1.78</td></tr>
</table></td><td></td></tr>
<tr><td>Expansion valve coil (LEV)</td><td>Measure the resistance using a tester. (Temperature: -10 ~ 40°C)
<table>
<tr><th>Color of lead wire</th><th>Normal (Ω)</th></tr>
<tr><td>RED – ORN</td><td rowspan="4">37 ~ 54</td></tr>
<tr><td>RED – WHT</td></tr>
<tr><td>RED – BLU</td></tr>
<tr><td>RED – YLW</td></tr>
</table></td><td> 
</td></tr>
<tr><td>Defrost heater</td><td>Measure the resistance using a tester. (Temperature: -10 ~ 40°C)
<table>
<tr><th colspan="2">Normal (Ω)</th></tr>
<tr><th>MUZ-FH25/35VEHZ</th><th>MUZ-FH50VEHZ</th></tr>
<tr><td>370 ~ 428</td><td>376 ~ 461</td></tr>
</table></td><td></td></tr>
</table>

11-5. TROUBLESHOOTING FLOW

Ⓐ How to check inverter/compressor


Disconnect the connector between the compressor and the power module (IC700) (MUZ-FH25/35)/IGBT module (IC700) (MUZ-FH50).
Check the voltage between terminals.
See 11-5.Ⓑ "Check of open phase".
Are the voltages balanced?
No
Replace the inverter P.C. board.
Yes
Check the compressor.
See 11-5.Ⓒ "Check of compressor".

Ⓑ Check of open phase

● With the connector between the compressor and the power module (IC700) (**MUZ-FH25/35**)/IGBT module (IC700) (**MUZ-FH50**) disconnected, activate the inverter and check if the inverter is normal by measuring **the voltage balance** between the terminals.

Output voltage is 50 - 130 V. (The voltage may differ according to the tester.)

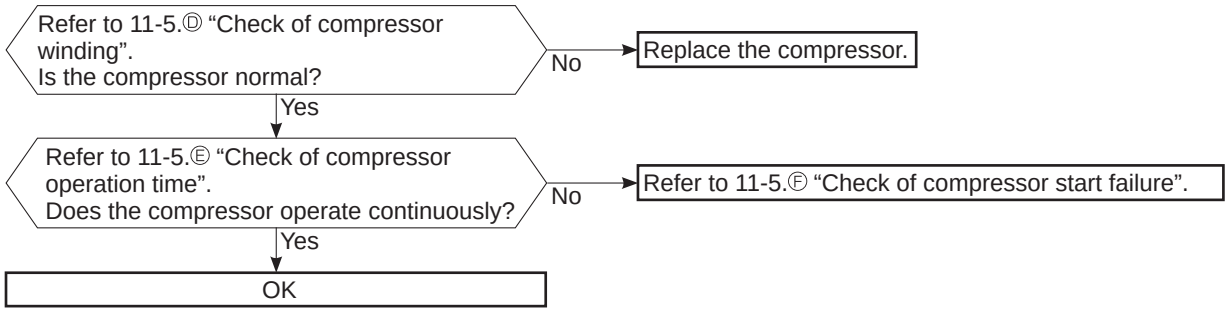
<< Operation method>>
Start cooling or heating operation by pressing EMERGENCY OPERATION switch on the indoor unit. (TEST RUN OPERATION: Refer to 8-3.)

<<Measurement point>>
At 3 points
BLK (U)-WHT (V)
BLK (U)-RED (W)
WHT(V)-RED (W)

※ Measure AC voltage between the lead wires at 3 points.

NOTE: 1. Output voltage varies according to power supply voltage.
2. Measure the voltage by analog type tester.
3. During this check, LED of the inverter P.C. board flashes 9 times. (Refer to 11-6.1.)

Ⓒ Check of compressor



Ⓓ Check of compressor winding

●Disconnect the connector between the compressor and the power module (IC700) (**MUZ-FH25/35**)/IGBT module (IC700) (**MUZ-FH50**), and measure the resistance between the compressor terminals.

<<Measurement point>>

At 3 points
BLK-WHT
BLK-RED
WHT-RED

※ Measure the resistance between the lead wires at 3 points.

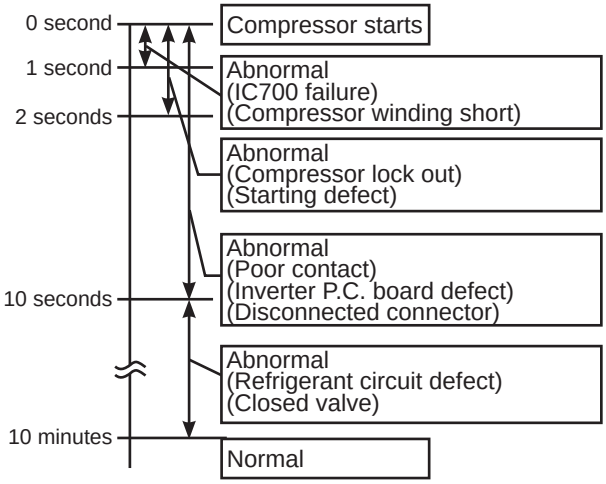
<<Judgement>>

Refer to 11-4.
0 [Ω] ·····Abnormal [short]
Infinite [Ω] ·····Abnormal [open]
NOTE: Be sure to zero the ohmmeter before measurement.

Ⓔ Check of compressor operation time

● Connect the compressor and activate the inverter. Then measure the time until the inverter stops due to overcurrent.
<<Operation method>>
Start heating or cooling operation by pressing EMERGENCY OPERATION switch on the indoor unit. (TEST RUN OPERATION: Refer to 8-3.)
<<Measurement>>
Measure the time from the start of compressor to the stop of compressor due to overcurrent.

<<Judgement>>



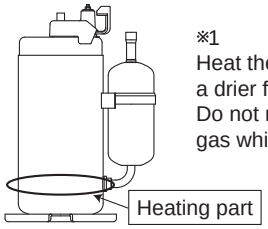
Ⓕ Check of compressor start failure

Confirm that ①~④ is normal.
•Electrical circuit check
①. Contact of the compressor connector
②. Output voltage of inverter P.C. board and balance of them (See 11-5.Ⓑ)
③. Direct current voltage between DB61(+) and (-) (**MUZ-FH25/35**)/JP715(+) and JP30(-) (**MUZ-FH50**) on the inverter P.C. board
④. Voltage between outdoor terminal block S1-S2

Does the compressor run for 10 seconds or more after it starts?
Yes → Check the refrigerant circuit. Check the stop valve.
No

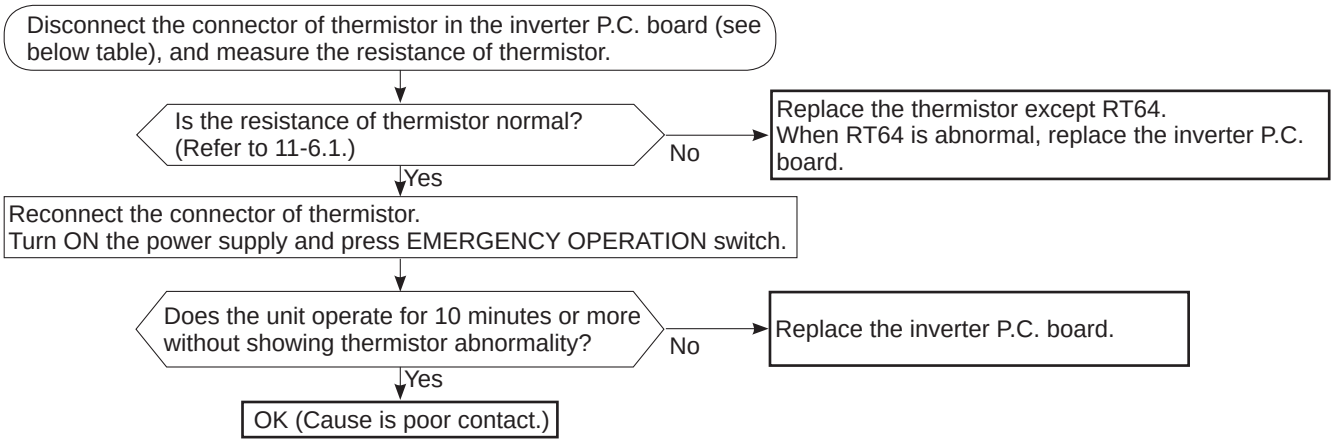
After the compressor is heated with a drier, does the compressor start? ※1
No → Replace the compressor.
Yes

Compressor start failure. Activate pre-heat control. (Refer to 10-2. "PRE-HEAT CONTROL SETTING")



※1
Heat the compressor with a drier for about 20 minutes. Do not recover refrigerant gas while heating.

Ⓖ Check of outdoor thermistors


Disconnect the connector of thermistor in the inverter P.C. board (see below table), and measure the resistance of thermistor.
Is the resistance of thermistor normal? (Refer to 11-6.1.)
No
Replace the thermistor except RT64. When RT64 is abnormal, replace the inverter P.C. board.
Yes
Reconnect the connector of thermistor. Turn ON the power supply and press EMERGENCY OPERATION switch.
Does the unit operate for 10 minutes or more without showing thermistor abnormality?
No
Replace the inverter P.C. board.
Yes
OK (Cause is poor contact.)

MUZ-FH25/35

Thermistor	Symbol	Connector, Pin No.	Board
Defrost	RT61	Between CN641 pin1 and pin2	Inverter P.C. board
Discharge temperature	RT62	Between CN641 pin3 and pin4	
Fin temperature	RT64	Between CN642 pin1 and pin2	
Ambient temperature	RT65	Between CN643 pin1 and pin2	
Outdoor heat exchanger temperature	RT68	Between CN644 pin1 and pin3	

MUZ-FH50

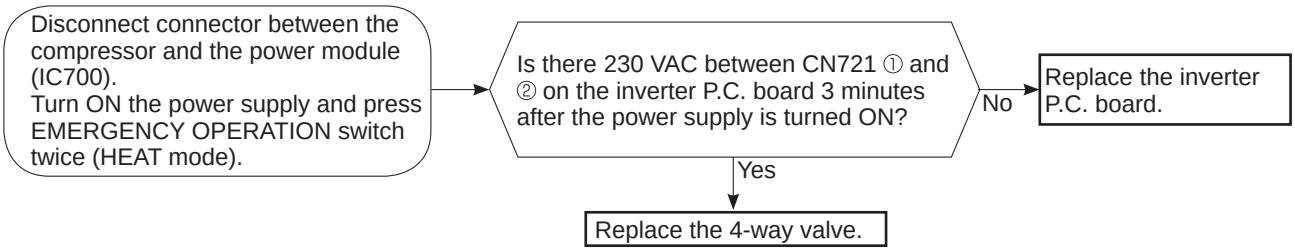
Thermistor	Symbol	Connector, Pin No.	Board
Defrost	RT61	Between CN671 pin1 and pin2	Inverter P.C. board
Discharge temperature	RT62	Between CN671 pin3 and pin4	
Fin temperature	RT64	Between CN673 pin1 and pin2	
Ambient temperature	RT65	Between CN672 pin1 and pin2	
Outdoor heat exchanger temperature	RT68	Between CN671 pin5 and pin6	

Ⓗ Check of R.V. coil

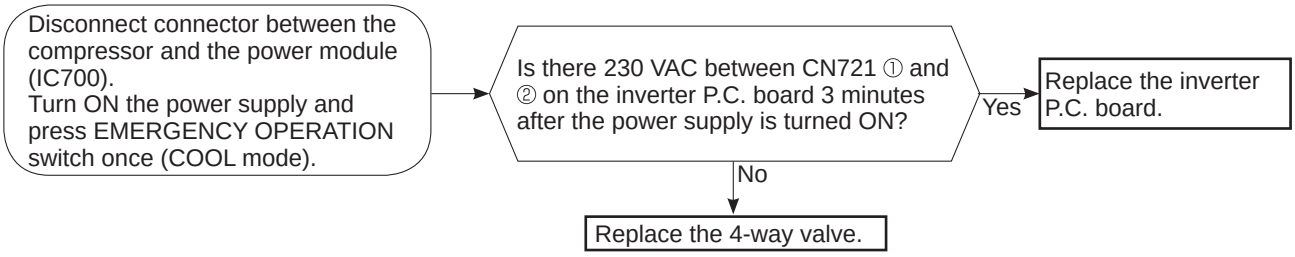
MUZ-FH25/35

※ First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to 11-4.
※ In case CN721 is disconnected or R.V. coil is open, voltage is generated between the terminal pins of the connector although no signal is being transmitted to R.V. coil.
Check if CN721 is connected.

Unit operates COOL mode even if it is set to HEAT mode.


Disconnect connector between the compressor and the power module (IC700).
Turn ON the power supply and press EMERGENCY OPERATION switch twice (HEAT mode).
Is there 230 VAC between CN721 ① and ② on the inverter P.C. board 3 minutes after the power supply is turned ON?
No
Replace the inverter P.C. board.
Yes
Replace the 4-way valve.

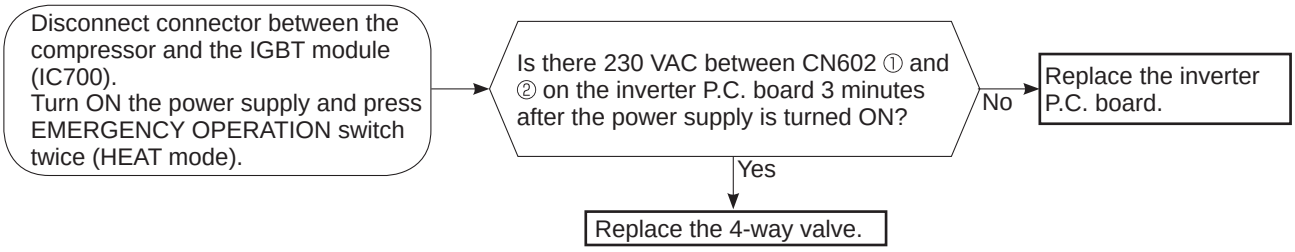
Unit operates HEAT mode even if it is set to COOL mode.


Disconnect connector between the compressor and the power module (IC700).
Turn ON the power supply and press EMERGENCY OPERATION switch once (COOL mode).
Is there 230 VAC between CN721 ① and ② on the inverter P.C. board 3 minutes after the power supply is turned ON?
Yes
Replace the inverter P.C. board.
No
Replace the 4-way valve.

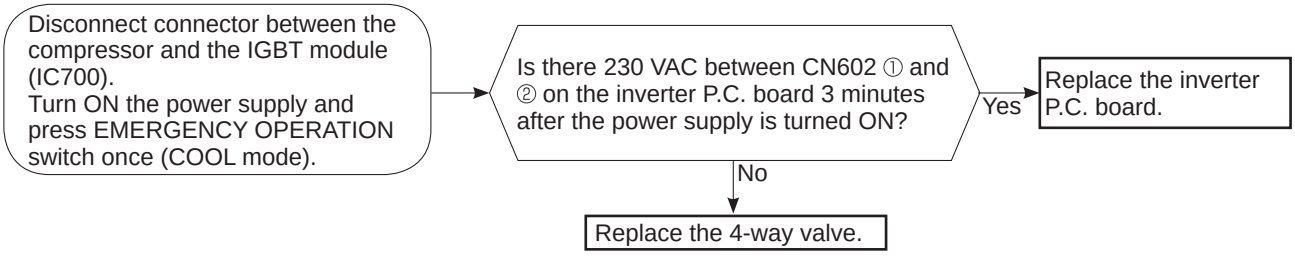
MUZ-FH50

※ First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to 11-4.
※ In case CN602 is disconnected or R.V. coil is open, voltage is generated between the terminal pins of the connector although no signal is being transmitted to R.V. coil.
Check if CN602 is connected.

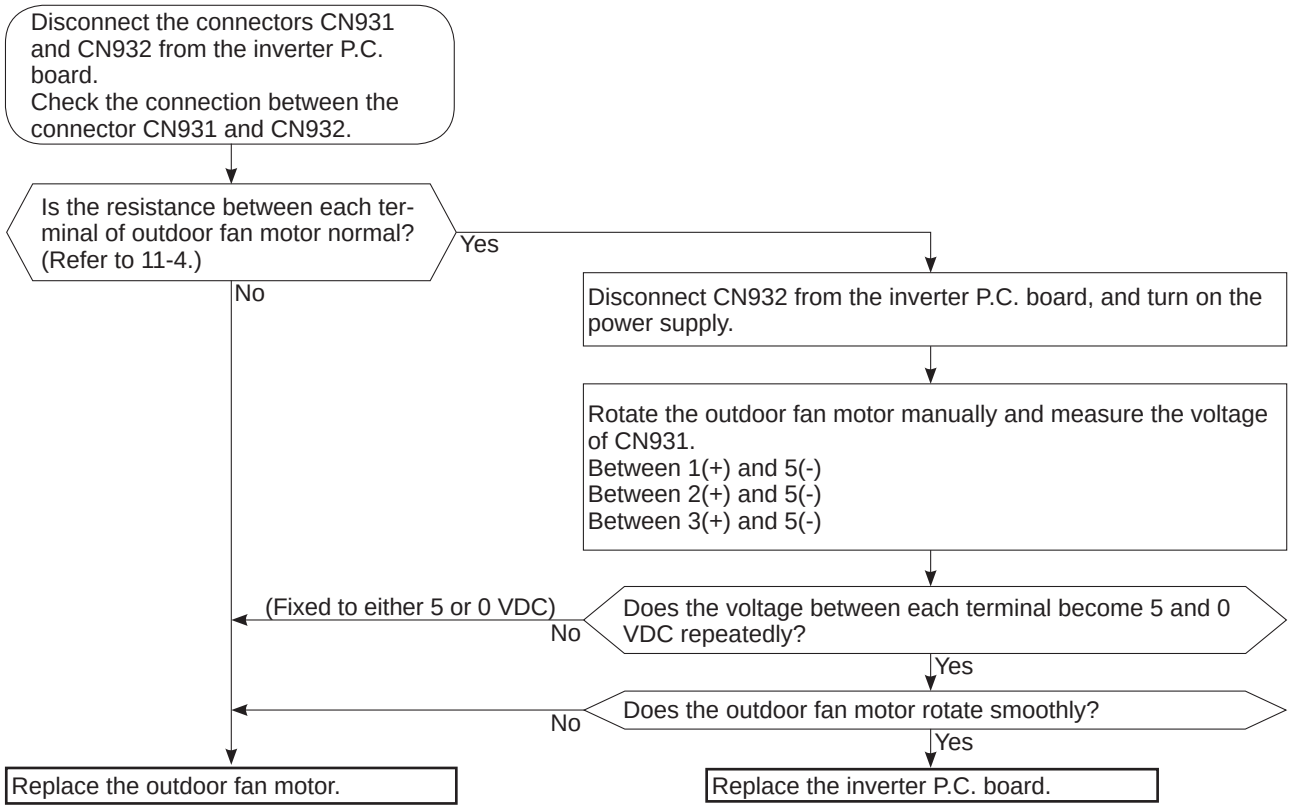
Unit operates COOL mode even if it is set to HEAT mode.


Disconnect connector between the compressor and the IGBT module (IC700).
Turn ON the power supply and press EMERGENCY OPERATION switch twice (HEAT mode).
Is there 230 VAC between CN602 ① and ② on the inverter P.C. board 3 minutes after the power supply is turned ON?
No
Replace the inverter P.C. board.
Yes
Replace the 4-way valve.

Unit operates HEAT mode even if it is set to COOL mode.


Disconnect connector between the compressor and the IGBT module (IC700).
Turn ON the power supply and press EMERGENCY OPERATION switch once (COOL mode).
Is there 230 VAC between CN602 ① and ② on the inverter P.C. board 3 minutes after the power supply is turned ON?
Yes
Replace the inverter P.C. board.
No
Replace the 4-way valve.

ⓘ Check of outdoor fan motor


Disconnect the connectors CN931 and CN932 from the inverter P.C. board.
Check the connection between the connector CN931 and CN932.
Is the resistance between each terminal of outdoor fan motor normal? (Refer to 11-4.)
Yes
No
Disconnect CN932 from the inverter P.C. board, and turn on the power supply.
Rotate the outdoor fan motor manually and measure the voltage of CN931.
Between 1(+) and 5(-)
Between 2(+) and 5(-)
Between 3(+) and 5(-)
Does the voltage between each terminal become 5 and 0 VDC repeatedly?
(Fixed to either 5 or 0 VDC)
No
Yes
Does the outdoor fan motor rotate smoothly?
No
Yes
Replace the outdoor fan motor.
Replace the inverter P.C. board.

Ⓙ Check of power supply

Disconnect the connector between the compressor and the power module (IC700) (**MUZ-FH25/35**)/IGBT module (IC700) (**MUZ-FH50**).
Turn ON power supply and press EMERGENCY OPERATION switch.

Does POWER lamp on the indoor unit light up?

No → Is there voltage 230 VAC between the indoor terminal block S1 and S2?

No → Rectify indoor/outdoor connecting wire.

Yes → Replace the indoor electronic control P.C. board.

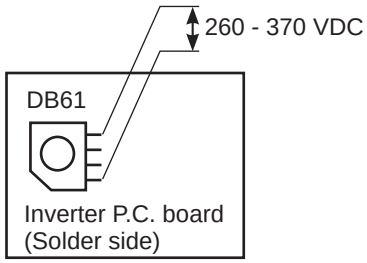
Yes → Is there bus-bar voltage 260 - 370 VDC between DB61 (+) and DB61 (–) (**MUZ-FH25/35**)/325 - 370 VDC between JP715 (+) and JP30 (–) (**MUZ-FH50**) on the inverter P.C. board? (Refer to 11-6.1.)

Yes → Does LED on the inverter P.C. board light up or flash? (Refer to 11-6.1.)

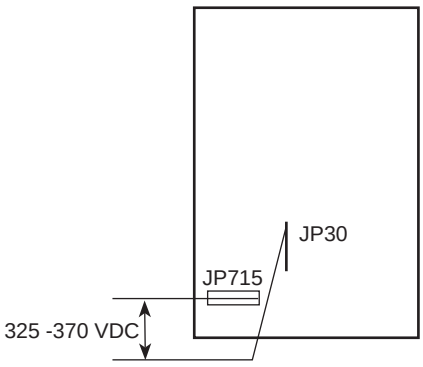
Yes → If light up, OK.
If flash, refer to 11-3.

No → Replace the inverter P.C. board.

No → Check the electric parts in main circuit.



MUZ-FH25/35



MUZ-FH50

Ⓚ Check of LEV (Expansion valve)

Turn ON the power supply.
<Preparation of the remote controller>
① While pressing both OPERATION SELECT button and TEMP ⊕ button on the remote controller at the same time, press RESET button.
② First, release RESET button.
Hold down the other 2 buttons for another 3 seconds. Make sure that the indicators on the LCD screen shown in the right figure are all displayed. Then release the buttons.

↓

Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/ STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1

↓

Expansion valve operates in full-opening direction.

↓

Do you hear the expansion valve "click, click·····"?
Do you feel the expansion valve vibrate when touching it ?

Yes → OK

No ↓

Is LEV coil properly fixed to the expansion valve?

No → Properly fix the LEV coil to the expansion valve.

Yes ↓

Does the resistance of LEV coil have the characteristics? (Refer to 11-4.)

Yes → Measure each voltage between connector pins of CN724 on the inverter P.C. board.
1. Pin③(-) — Pin①(+)
2. Pin④(-) — Pin①(+)
3. Pin⑤(-) — Pin①(+)
4. Pin⑥(-) — Pin①(+)

Is there about 3 - 5 VAC between each?
NOTE: Measure the voltage by an analog tester.

No → Replace the inverter P.C. board.

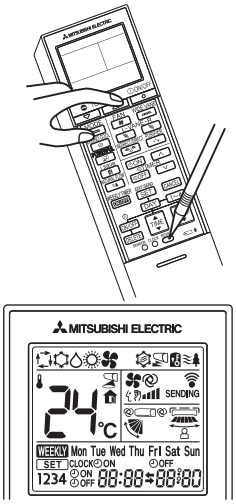
Yes ↓

Replace the expansion valve.

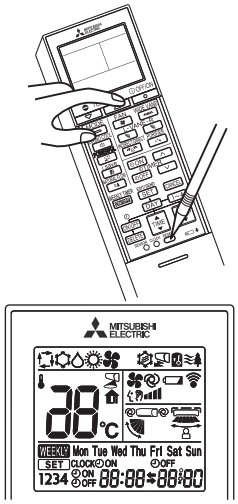
No ↓

Replace the LEV coil.

MSZ-FH25VE
MSZ-FH35VE
MSZ-FH50VE



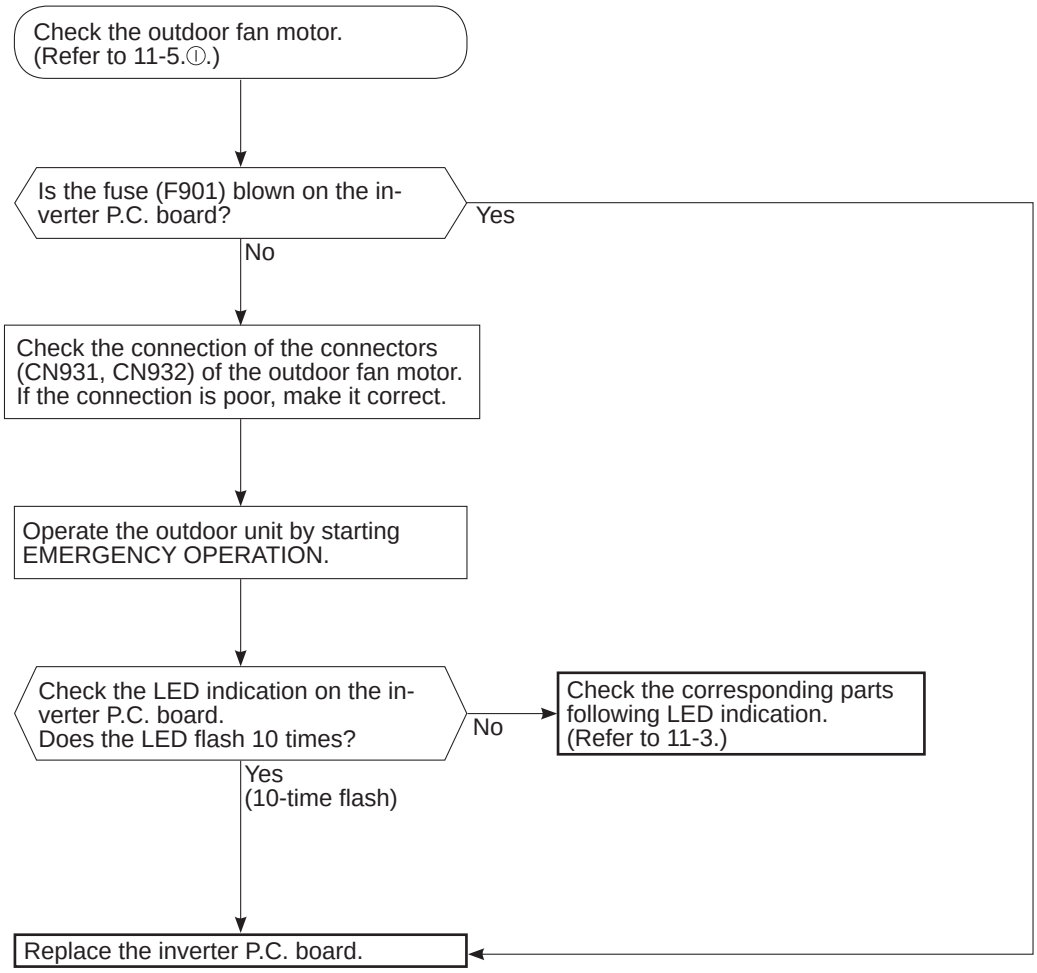
MSZ-FH25VE2
MSZ-FH35VE2
MSZ-FH50VE2



※1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

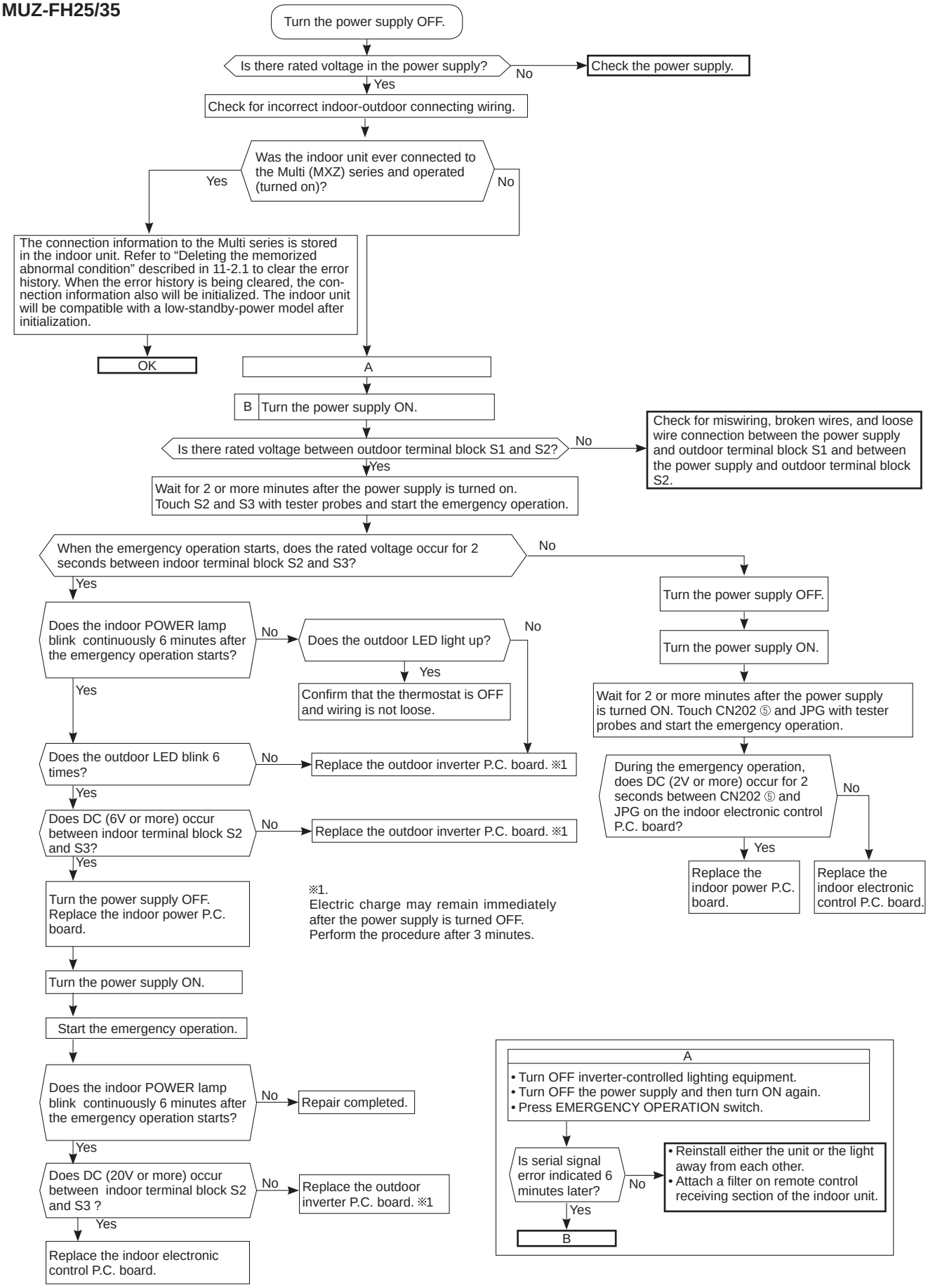
NOTE: After check of LEV, do the undermentioned operations.
1. Turn OFF the power supply and turn it ON again.
2. Press RESET button on the remote controller.

Ⓛ Check of inverter P.C. board

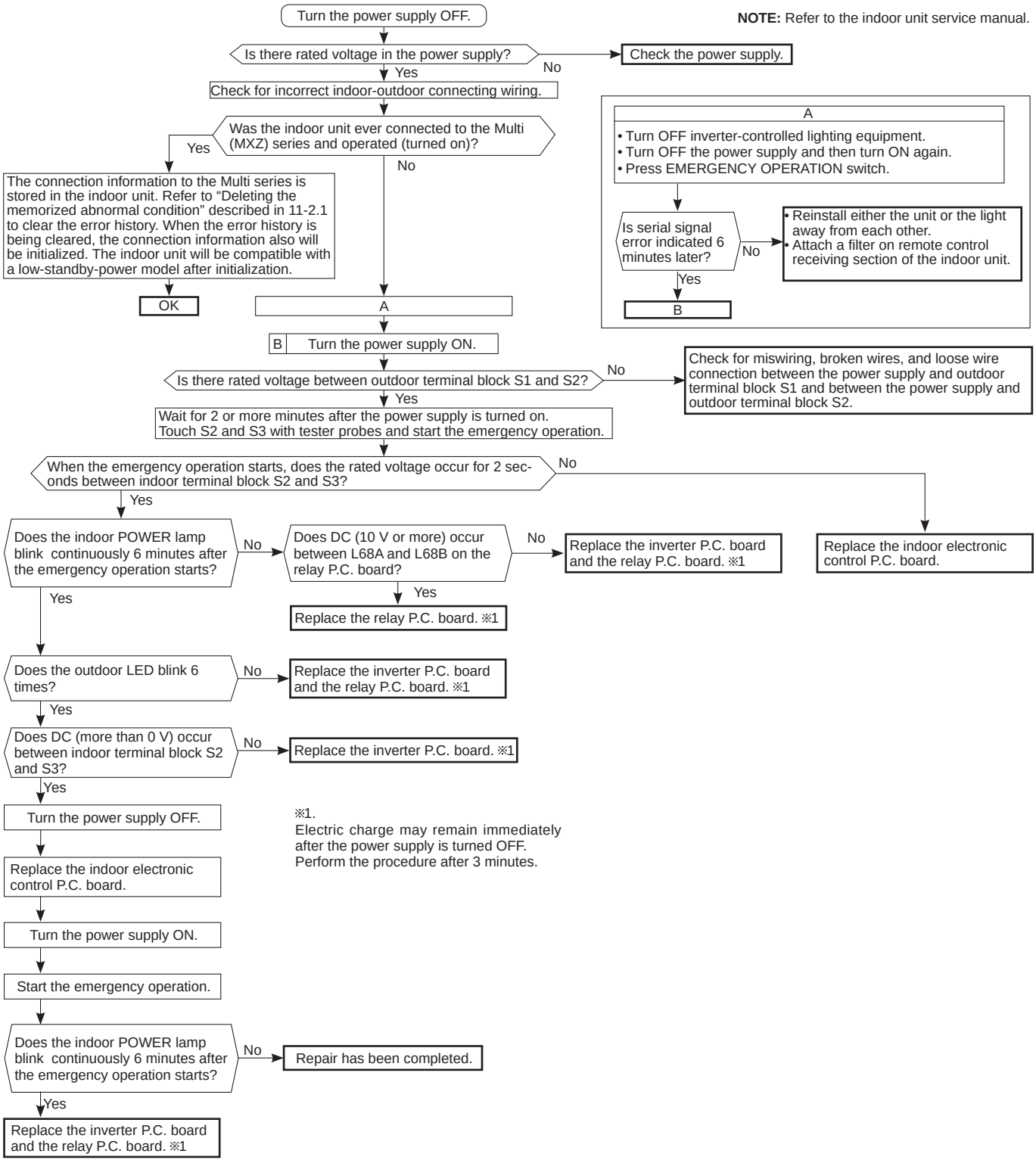

Check the outdoor fan motor.
(Refer to 11-5.①.)
Is the fuse (F901) blown on the inverter P.C. board?
Yes
No
Check the connection of the connectors (CN931, CN932) of the outdoor fan motor.
If the connection is poor, make it correct.
Operate the outdoor unit by starting EMERGENCY OPERATION.
Check the LED indication on the inverter P.C. board.
Does the LED flash 10 times?
No
Check the corresponding parts following LED indication.
(Refer to 11-3.)
Yes
(10-time flash)
Replace the inverter P.C. board.

Ⓜ How to check miswiring and serial signal error

MUZ-FH25/35

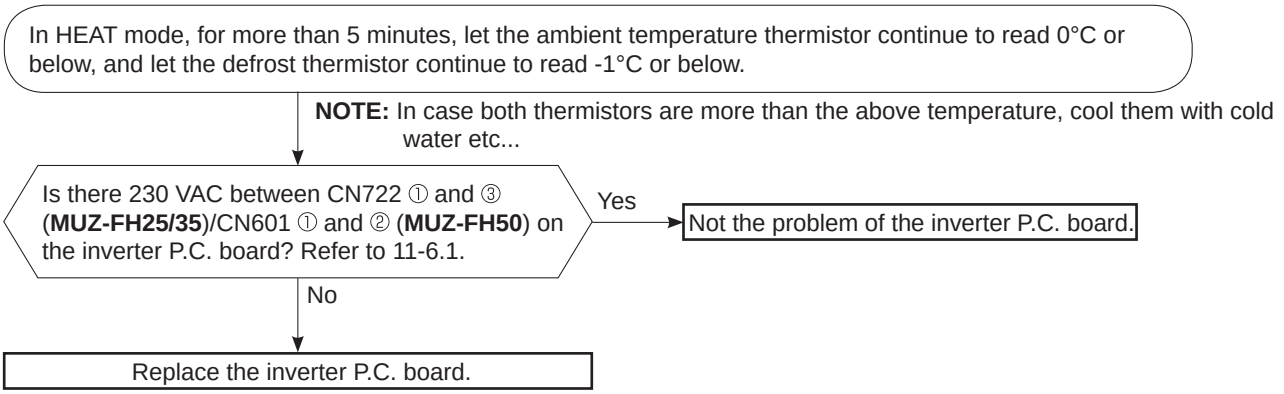

Turn the power supply OFF.
Is there rated voltage in the power supply?
No
Check the power supply.
Yes
Check for incorrect indoor-outdoor connecting wiring.
Was the indoor unit ever connected to the Multi (MXZ) series and operated (turned on)?
Yes
No
The connection information to the Multi series is stored in the indoor unit. Refer to "Deleting the memorized abnormal condition" described in 11-2.1 to clear the error history. When the error history is being cleared, the connection information also will be initialized. The indoor unit will be compatible with a low-standby-power model after initialization.
OK
A
B
Turn the power supply ON.
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check for miswiring, broken wires, and loose wire connection between the power supply and outdoor terminal block S1 and between the power supply and outdoor terminal block S2.
Yes
Wait for 2 or more minutes after the power supply is turned on.
Touch S2 and S3 with tester probes and start the emergency operation.
When the emergency operation starts, does the rated voltage occur for 2 seconds between indoor terminal block S2 and S3?
No
Yes
Turn the power supply OFF.
Turn the power supply ON.
Wait for 2 or more minutes after the power supply is turned ON. Touch CN202 ⑤ and JPG with tester probes and start the emergency operation.
During the emergency operation, does DC (2V or more) occur for 2 seconds between CN202 ⑤ and JPG on the indoor electronic control P.C. board?
No
Yes
Replace the indoor power P.C. board.
Replace the indoor electronic control P.C. board.
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Does the outdoor LED light up?
No
Yes
Confirm that the thermostat is OFF and wiring is not loose.
Yes
Does the outdoor LED blink 6 times?
No
Replace the outdoor inverter P.C. board. ※1
Yes
Does DC (6V or more) occur between indoor terminal block S2 and S3?
No
Replace the outdoor inverter P.C. board. ※1
Yes
Turn the power supply OFF.
Replace the indoor power P.C. board.
※1.
Electric charge may remain immediately after the power supply is turned OFF.
Perform the procedure after 3 minutes.
Turn the power supply ON.
Start the emergency operation.
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Repair completed.
Yes
Does DC (20V or more) occur between indoor terminal block S2 and S3 ?
No
Replace the outdoor inverter P.C. board. ※1
Yes
Replace the indoor electronic control P.C. board.
A
• Turn OFF inverter-controlled lighting equipment.
• Turn OFF the power supply and then turn ON again.
• Press EMERGENCY OPERATION switch.
Is serial signal error indicated 6 minutes later?
No
• Reinstall either the unit or the light away from each other.
• Attach a filter on remote control receiving section of the indoor unit.
Yes
B

MUZ-FH50

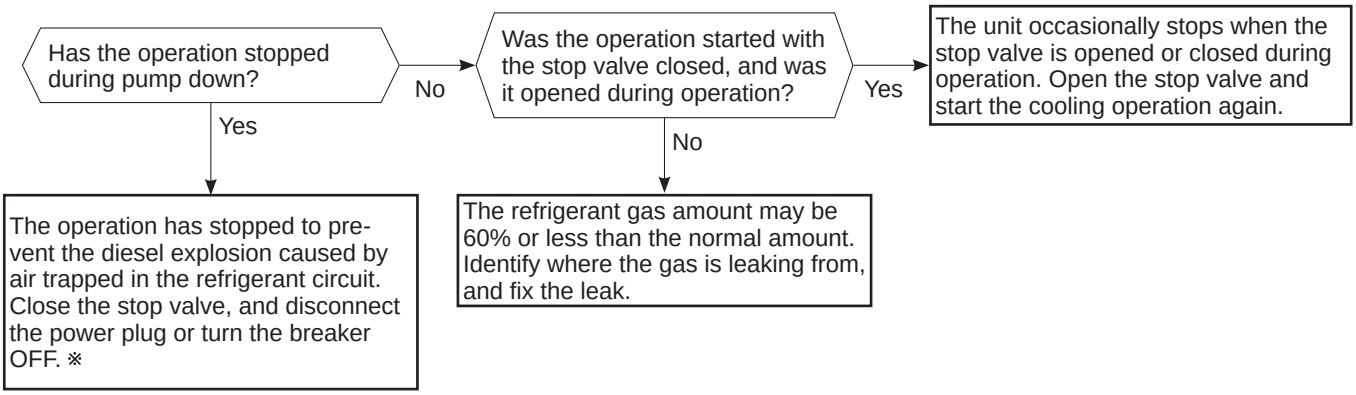

Turn the power supply OFF.
NOTE: Refer to the indoor unit service manual.
Is there rated voltage in the power supply?
No
Check the power supply.
Yes
Check for incorrect indoor-outdoor connecting wiring.
Was the indoor unit ever connected to the Multi (MXZ) series and operated (turned on)?
Yes
No
The connection information to the Multi series is stored in the indoor unit. Refer to "Deleting the memorized abnormal condition" described in 11-2.1 to clear the error history. When the error history is being cleared, the connection information also will be initialized. The indoor unit will be compatible with a low-standby-power model after initialization.
OK
A
• Turn OFF inverter-controlled lighting equipment.
• Turn OFF the power supply and then turn ON again.
• Press EMERGENCY OPERATION switch.
Is serial signal error indicated 6 minutes later?
No
• Reinstall either the unit or the light away from each other.
• Attach a filter on remote control receiving section of the indoor unit.
Yes
B
B
Turn the power supply ON.
Is there rated voltage between outdoor terminal block S1 and S2?
No
Check for miswiring, broken wires, and loose wire connection between the power supply and outdoor terminal block S1 and between the power supply and outdoor terminal block S2.
Yes
Wait for 2 or more minutes after the power supply is turned on.
Touch S2 and S3 with tester probes and start the emergency operation.
When the emergency operation starts, does the rated voltage occur for 2 seconds between indoor terminal block S2 and S3?
No
Replace the indoor electronic control P.C. board.
Yes
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Does DC (10 V or more) occur between L68A and L68B on the relay P.C. board?
No
Replace the inverter P.C. board and the relay P.C. board. ※1
Yes
Replace the relay P.C. board. ※1
Yes
Does the outdoor LED blink 6 times?
No
Replace the inverter P.C. board and the relay P.C. board. ※1
Yes
Does DC (more than 0 V) occur between indoor terminal block S2 and S3?
No
Replace the inverter P.C. board. ※1
Yes
Turn the power supply OFF.
Replace the indoor electronic control P.C. board.
Turn the power supply ON.
Start the emergency operation.
Does the indoor POWER lamp blink continuously 6 minutes after the emergency operation starts?
No
Repair has been completed.
Yes
Replace the inverter P.C. board and the relay P.C. board. ※1
※1.
Electric charge may remain immediately after the power supply is turned OFF.
Perform the procedure after 3 minutes.

Ⓝ Check of defrost heater

Check the following points before checking electric continuity.
1. Does the resistance of ambient temperature thermistor have the characteristics? Refer to 11-6.1.
2. Is the resistance of defrost heater normal? Refer to 11-4.
3. Does the heater protector remain conducted (not open)?
4. Are both ambient temperature thermistor and circuit of defrost heater securely connected to connectors?

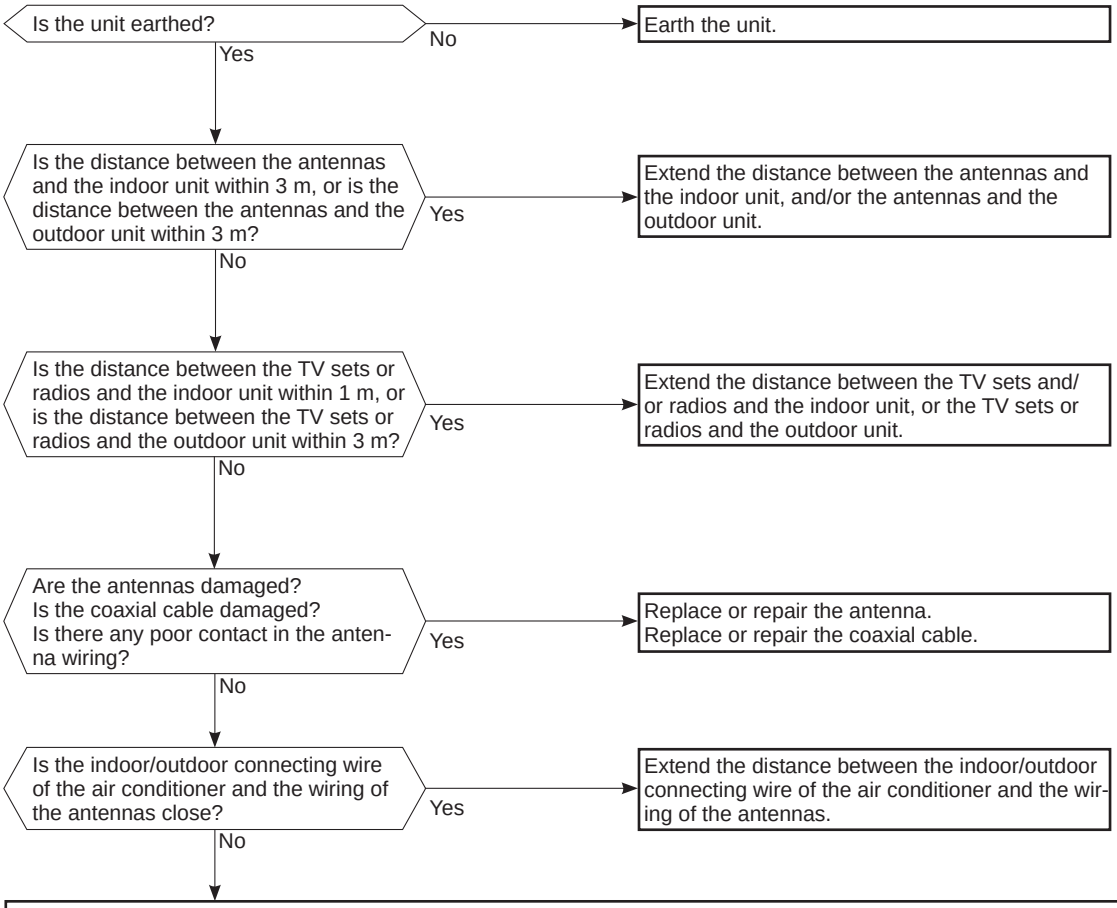

In HEAT mode, for more than 5 minutes, let the ambient temperature thermistor continue to read 0°C or below, and let the defrost thermistor continue to read -1°C or below.
NOTE: In case both thermistors are more than the above temperature, cool them with cold water etc...
Is there 230 VAC between CN722 ① and ③ (MUZ-FH25/35)/CN601 ① and ② (MUZ-FH50) on the inverter P.C. board? Refer to 11-6.1.
Yes
Not the problem of the inverter P.C. board.
No
Replace the inverter P.C. board.

Ⓞ Check of outdoor refrigerant circuit


Has the operation stopped during pump down?
No
Was the operation started with the stop valve closed, and was it opened during operation?
Yes
The unit occasionally stops when the stop valve is opened or closed during operation. Open the stop valve and start the cooling operation again.
Yes
No
The operation has stopped to prevent the diesel explosion caused by air trapped in the refrigerant circuit. Close the stop valve, and disconnect the power plug or turn the breaker OFF. ※
The refrigerant gas amount may be 60% or less than the normal amount. Identify where the gas is leaking from, and fix the leak.

※ CAUTION : Do not start the operation again to prevent hazards.

Ⓟ Electromagnetic noise enters into TV sets or radios


Is the unit earthed?
No
Earth the unit.
Yes
Is the distance between the antennas and the indoor unit within 3 m, or is the distance between the antennas and the outdoor unit within 3 m?
Yes
Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.
No
Is the distance between the TV sets or radios and the indoor unit within 1 m, or is the distance between the TV sets or radios and the outdoor unit within 3 m?
Yes
Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.
No
Are the antennas damaged?
Is the coaxial cable damaged?
Is there any poor contact in the antenna wiring?
Yes
Replace or repair the antenna.
Replace or repair the coaxial cable.
No
Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close?
Yes
Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.
No

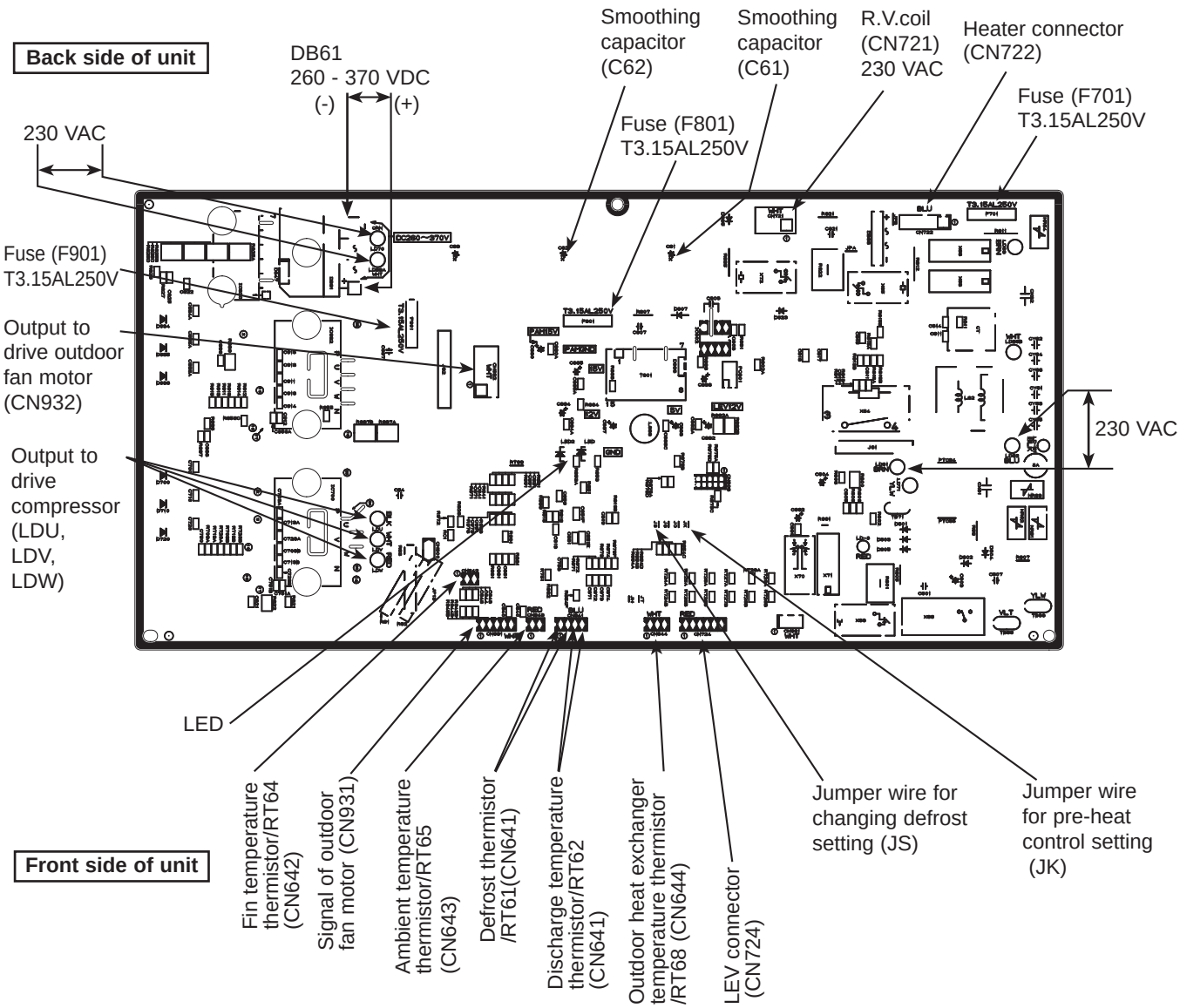
Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).
Check the following before asking for service.

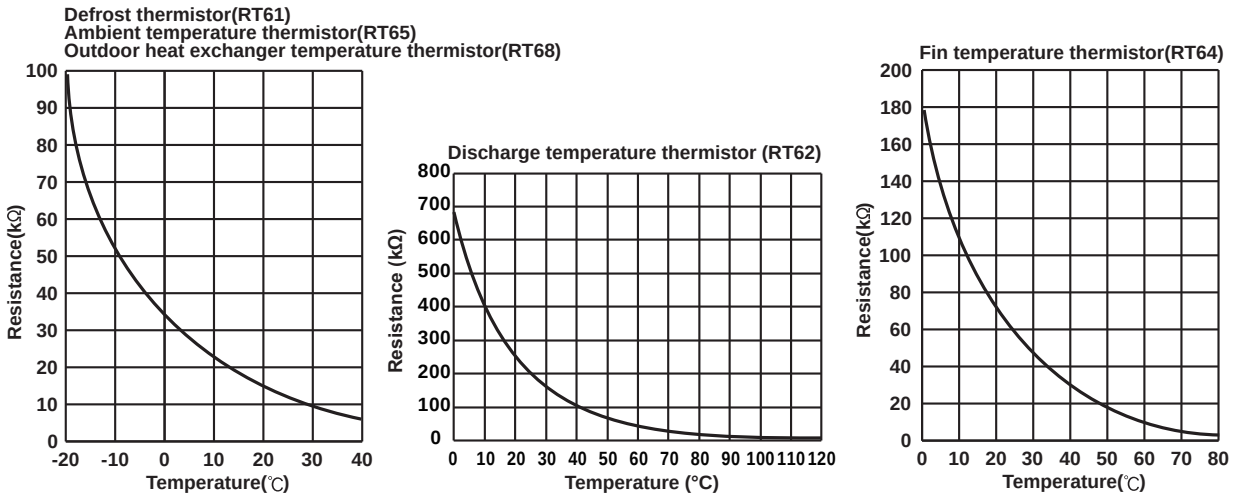
1. Devices affected by the electromagnetic noise
   TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of:
   indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, earth wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
   1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button on the remote controller for power ON, and check for the electromagnetic noise.
   3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4) Press OPERATE/STOP (ON/OFF) (**MSZ-FH25/35/50VE**)/STOP/OPERATE (OFF/ON) (**MSZ-FH25/35/50VE2**) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.

11-6. TEST POINT DIAGRAM AND VOLTAGE

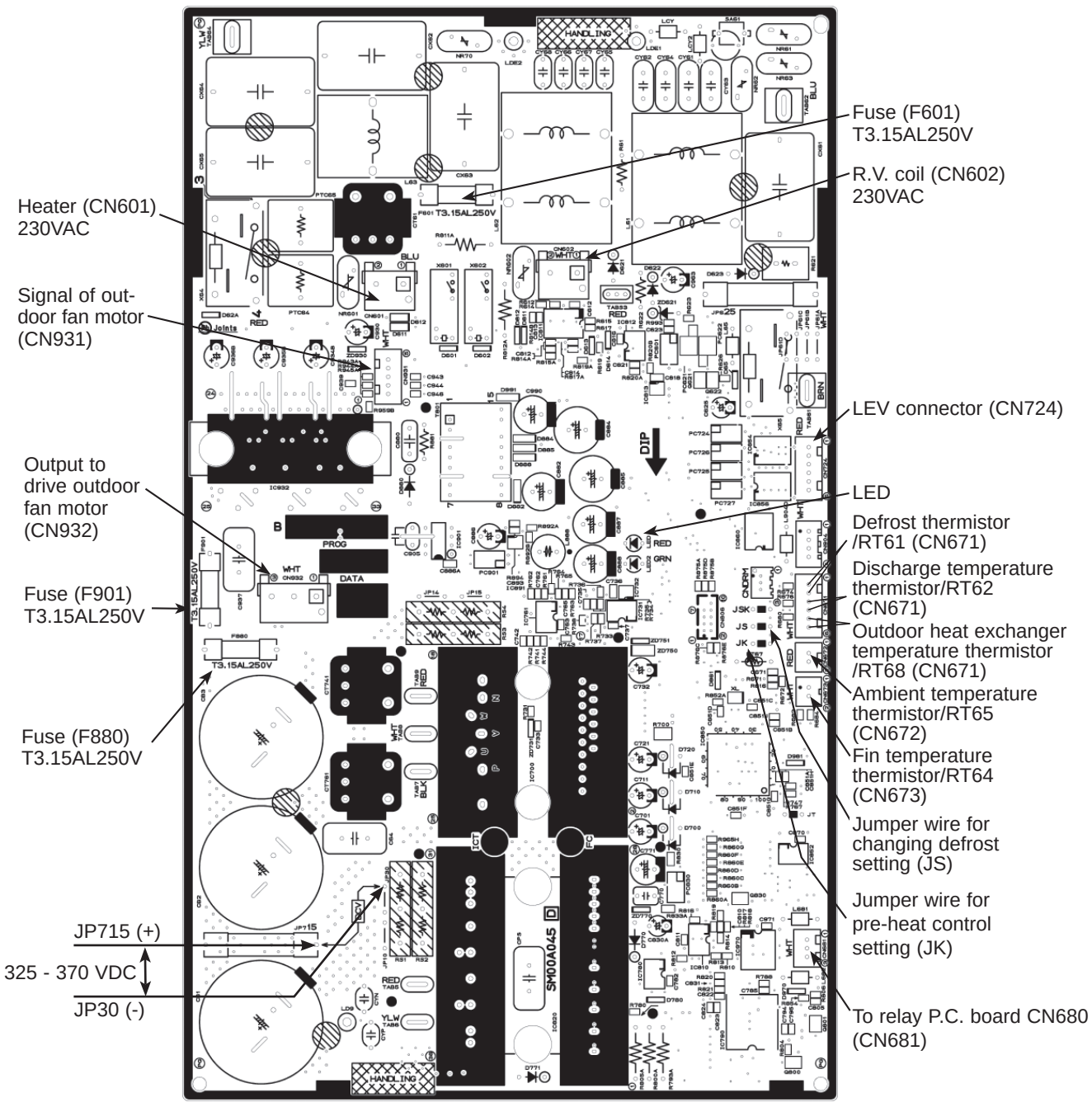
1. Inverter P.C. board

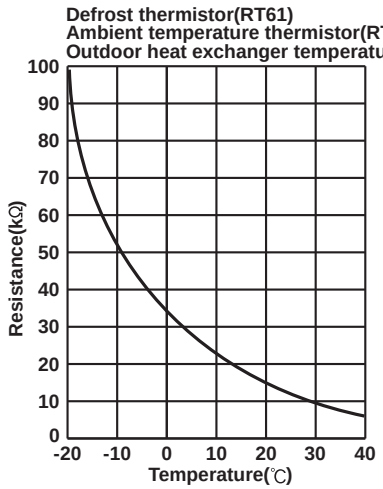
MUZ-FH25VEHZ
MUZ-FH35VEHZ

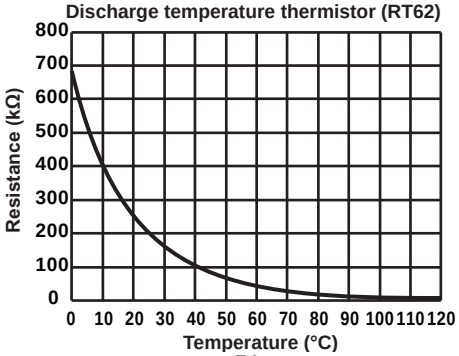


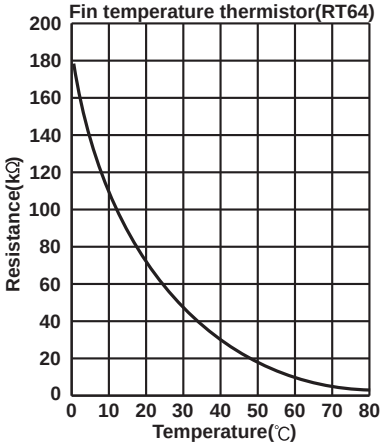

Defrost thermistor(RT61)
Ambient temperature thermistor(RT65)
Outdoor heat exchanger temperature thermistor(RT68)
Resistance(kΩ)
100 90 80 70 60 50 40 30 20 10 0
-20 -10 0 10 20 30 40
Temperature(℃)
Discharge temperature thermistor (RT62)
Resistance (kΩ)
800 700 600 500 400 300 200 100 0
0 10 20 30 40 50 60 70 80 90 100 110 120
Temperature (°C)
Fin temperature thermistor(RT64)
Resistance(kΩ)
200 180 160 140 120 100 80 60 40 20 0
0 10 20 30 40 50 60 70 80
Temperature(℃)

MUZ-FH50VEHZ



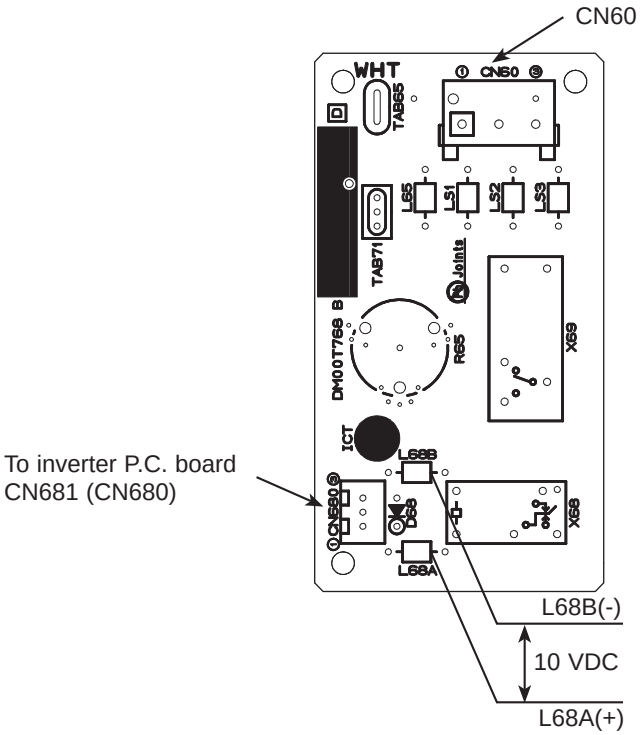






2. Relay P.C. board

MUZ-FH50VEHZ

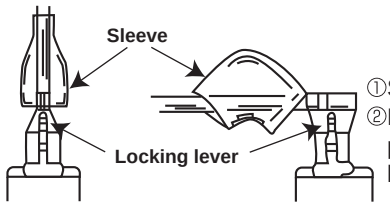


12 DISASSEMBLY INSTRUCTIONS

<"Terminal with locking mechanism" Detaching points>

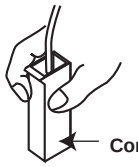
The terminal which has the locking mechanism can be detached as shown below.
There are 2 types (refer to (1) and (2)) of the terminal with locking mechanism.
The terminal without locking mechanism can be detached by pulling it out.
Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.



①Slide the sleeve.
②Pull the terminal while pushing the locking lever.

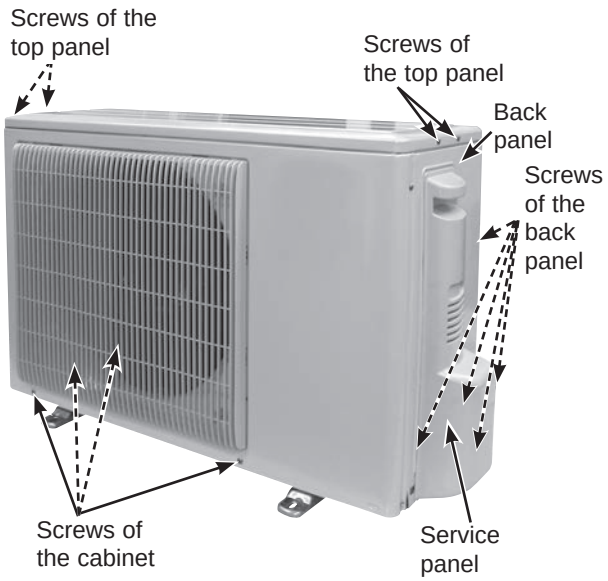
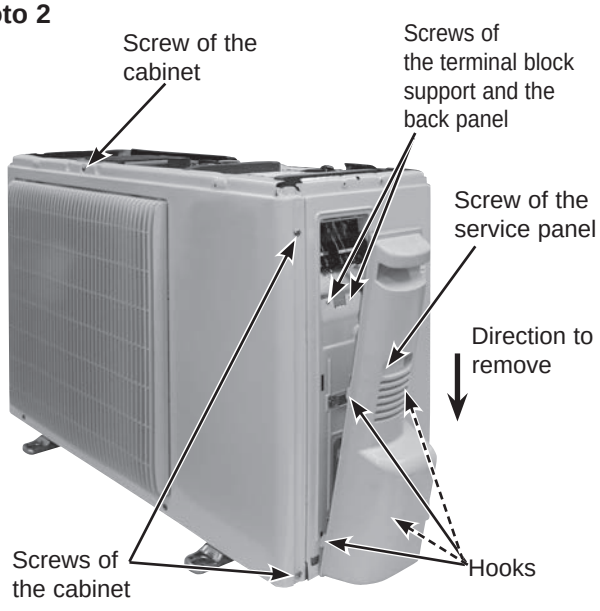
(2) The terminal with this connector has the locking mechanism.



①Hold the sleeve, and pull out the terminal slowly.

12-1. MUZ-FH25VEHZ MUZ-FH35VEHZ

NOTE: Turn OFF the power supply before disassembly.

OPERATING PROCEDURE	PHOTOS
1. Removing the cabinet (1) Remove the screw fixing the service panel. (2) Pull down the service panel and remove it. (3) Disconnect the power supply and indoor/outdoor connecting wire. (4) Remove the screws fixing the top panel. (5) Remove the top panel. (6) Remove the screws fixing the cabinet. (7) Remove the cabinet. (8) Remove the screws fixing the back panel. (9) Remove the back panel.	**Photo 1**  **Photo 2** 

OPERATING PROCEDURE

2. Removing the inverter assembly, inverter P.C. board

(1) Remove the cabinet and panels. (Refer to 1.)
(2) Disconnect the lead wire to the reactor and the following connectors:
<Inverter P.C. board>
CN721 (R.V. coil)
CN722 (Defrost heater)
CN931, CN932 (Fan motor)
CN641 (Defrost thermistor and discharge temperature thermistor)
CN643 (Ambient temperature thermistor)
CN644 (Outdoor heat exchanger temperature thermistor)
CN724 (LEV)
(3) Remove the compressor connector (CN61).
(4) Remove the screws fixing the heat sink support and the separator.
(5) Remove the fixing screws of the terminal block support and the back panel.
(6) Remove the inverter assembly.
(7) Remove the screw of the earth wire and screw of the terminal block support.
(8) Remove the heat sink support from the P.C. board support.
(9) Remove the screw of the inverter P.C. board and remove the inverter P.C. board from the P.C. board support.

3. Removing R.V. coil

(1) Remove the cabinet and panels. (Refer to 1.)
(2) Disconnect the following connectors:
<Inverter P.C. board>
CN721 (R.V. coil)
(3) Remove the R.V. coil.

4. Removing the discharge temperature thermistor, defrost thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor

(1) Remove the cabinet and panels. (Refer to 1.)
(2) Disconnect the lead wire to the reactor and the following connectors:
<Inverter P.C. board>
CN641 (Defrost thermistor and discharge temperature thermistor)
CN643 (Ambient temperature thermistor)
CN644 (Outdoor heat exchanger temperature thermistor)
(3) Pull out the discharge temperature thermistor from its holder.
(4) Pull out the defrost thermistor from its holder. (Photo 6)
(5) Pull out the outdoor heat exchanger temperature thermistor from its holder. (Photo 6)
(6) Pull out the ambient temperature thermistor from its holder.

PHOTOS

Photo 3

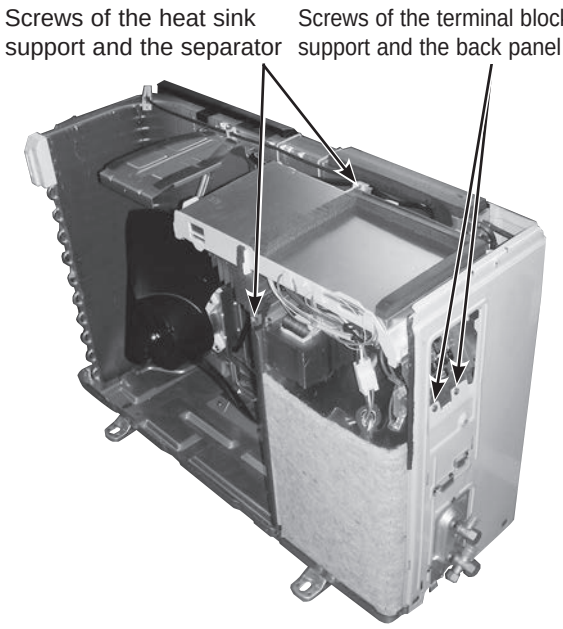


Photo 4 (Inverter assembly)

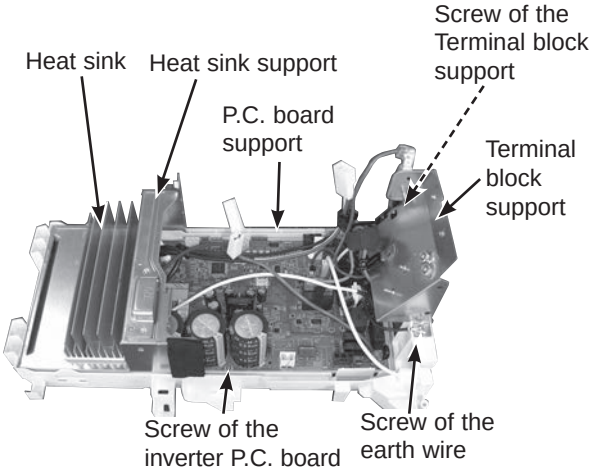
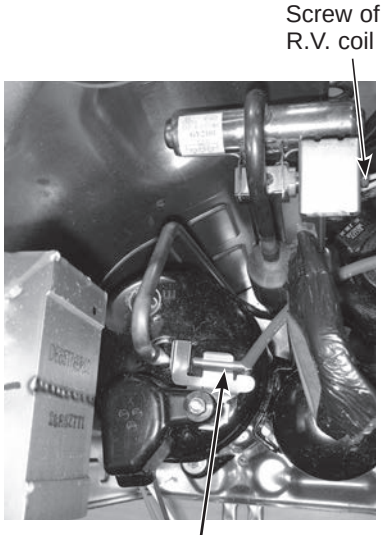

Heat sink
Heat sink support
P.C. board support
Screw of the Terminal block support
Terminal block support
Screw of the inverter P.C. board
Screw of the earth wire

Photo 5



OPERATING PROCEDURE

5. Removing outdoor fan motor

(1) Remove the cabinet and panels. (Refer to 1.)
(2) Disconnect the following connectors:
<Inverter P.C. board>
CN931, CN932 (Fan motor)
(3) Remove the propeller fan nut.
(4) Remove the propeller fan.
(5) Remove the screws fixing the fan motor.
(6) Remove the fan motor.

6. Removing the compressor and 4-way valve

(1) Remove the cabinet and panels. (Refer to 1.)
(2) Remove the inverter assembly. (Refer to 2.)
(3) Recover gas from the refrigerant circuit.
NOTE: Recover gas from the pipes until the pressure gauge shows 0 kg/cm^2 (0 MPa).
(4) Detach the brazed part of the suction and the discharge pipe connected with compressor.
(5) Remove the nuts of compressor legs.
(6) Remove the compressor.
(7) Detach the brazed part of pipes connected with 4-way valve.

Photo 8

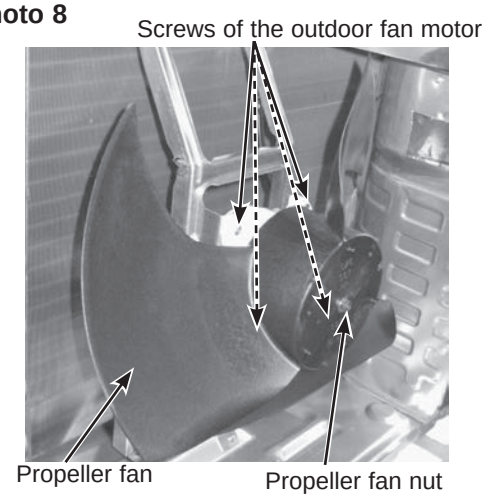
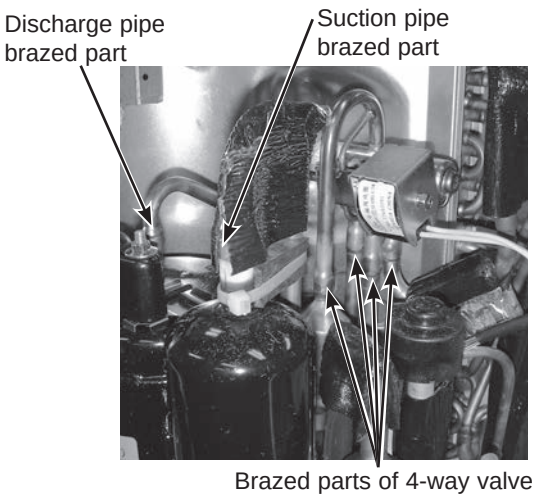


Photo 9



PHOTOS

Photo 6

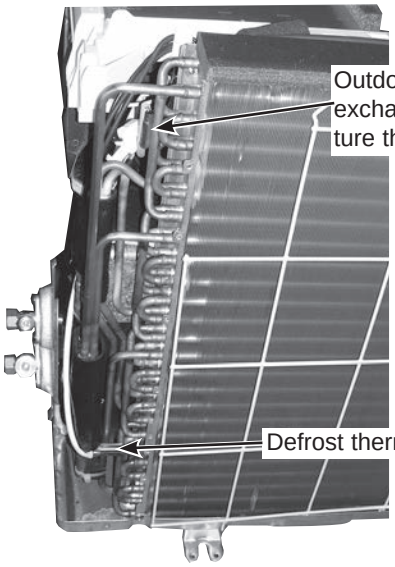
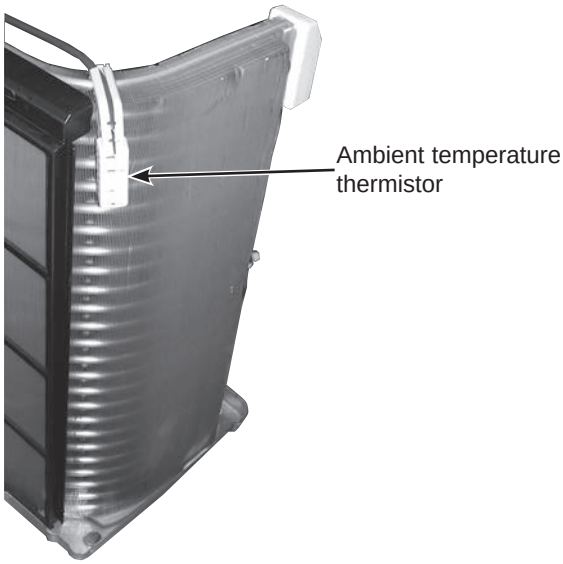
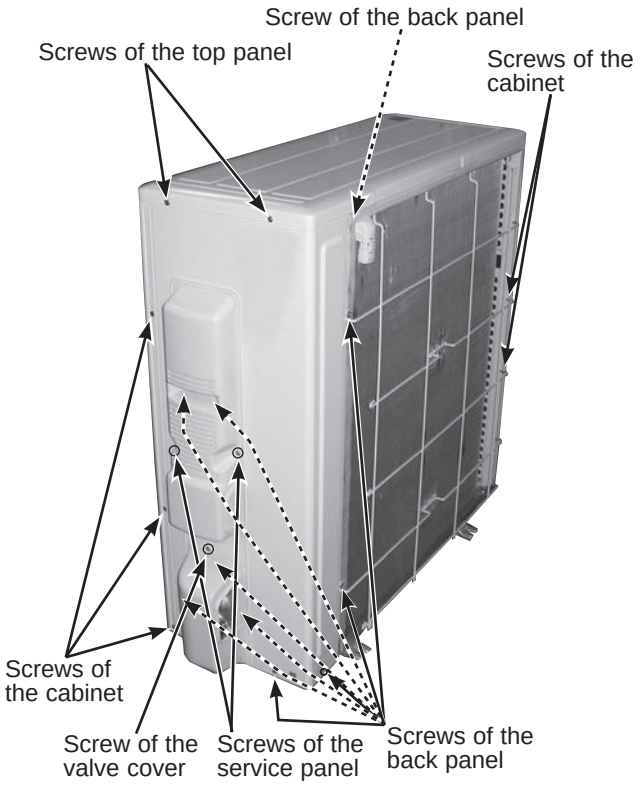
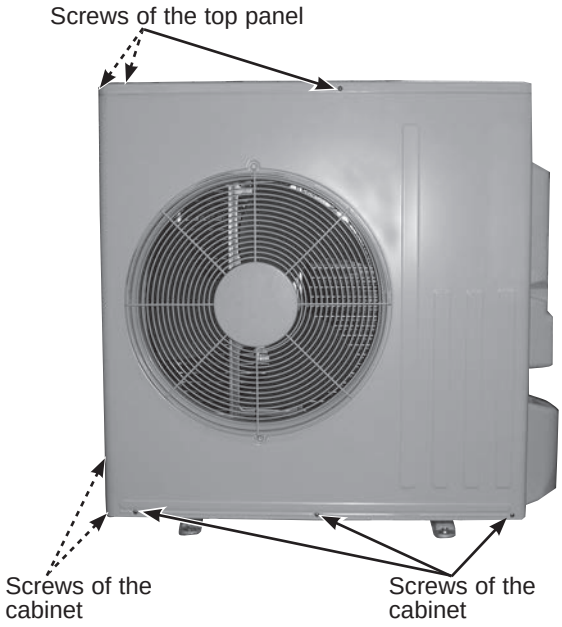


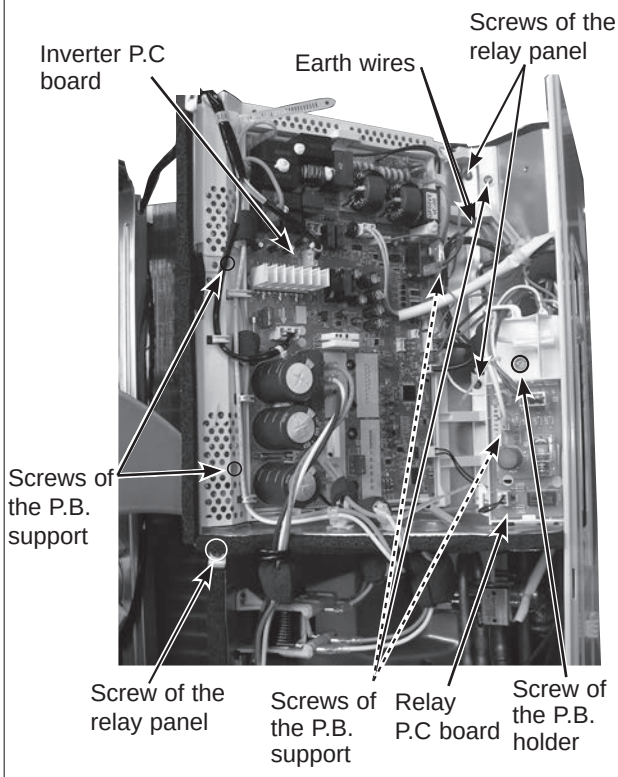
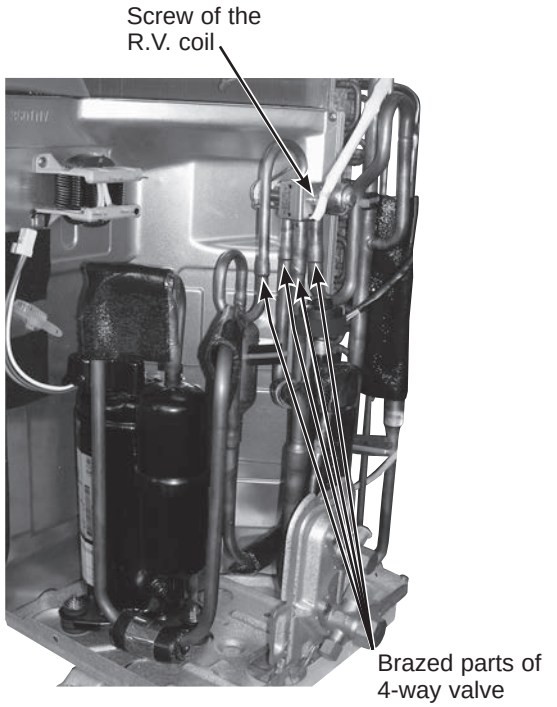
Photo 7

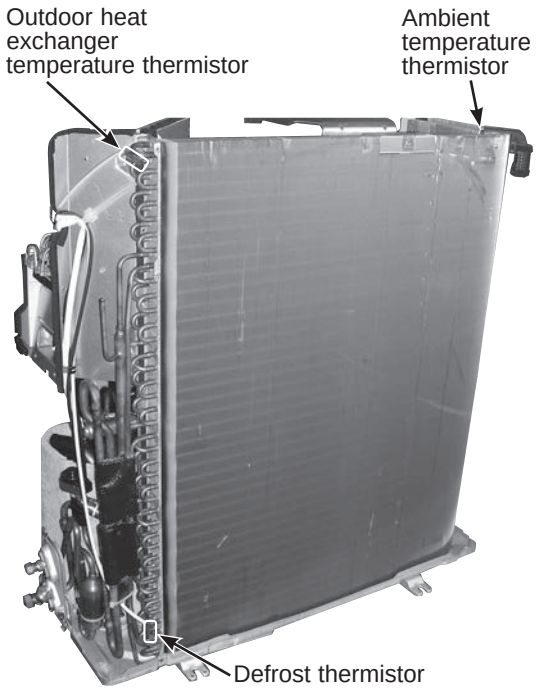
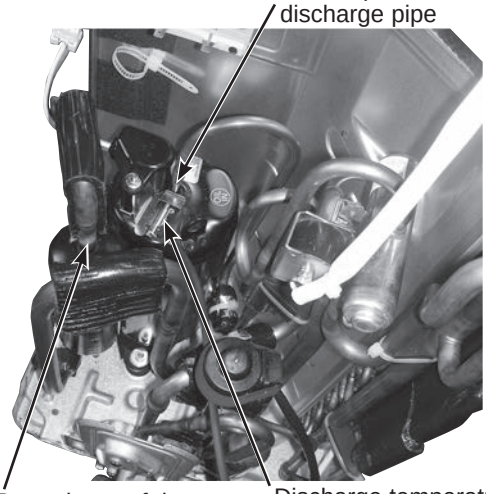


12-2. MUZ-FH50VEHZ

NOTE: Turn OFF the power supply before disassembly.

OPERATING PROCEDURE	PHOTOS
1. Removing the cabinet (1) Remove the screws of the service panel. (2) Remove the screws of the top panel. (3) Remove the screw of the valve cover. (4) Remove the service panel. (5) Remove the top panel. (6) Remove the valve cover. (7) Disconnect the power supply and indoor/outdoor connecting wire. (8) Remove the screws of the cabinet. (9) Remove the cabinet. (10) Remove the screws of the back panel. (11) Remove the back panel. **Photo 2**  	**Photo 1** 

OPERATING PROCEDURE	PHOTOS
2. Removing the inverter assembly, inverter P.C. board and relay P.C. board (1) Remove the cabinet and panels. (Refer to 1.) (2) Disconnect the lead wire to the reactor and the following connectors: <Inverter P.C. board> CN602 (R.V. coil) CN931, CN932 (Fan motor) CN671 (Defrost thermistor, discharge temperature thermistor and outdoor heat exchanger temperature thermistor) CN672 (Ambient temperature thermistor) CN724 (LEV) CN601 (Defrost heater and heater protector) (3) Remove the compressor connector. (4) Remove the screws fixing the relay panel. (5) Remove the relay panel. (6) Remove the earth wires and the lead wires of the inverter P.C. board. (7) Remove the screws of the P.B. support. (8) Remove the inverter P.C. board from the relay panel. (9) Disconnect the following connectors: <Relay P.C. board> CN60 (Terminal block) CN680 (Inverter P.C. board) TAB65 (Inverter P.C. board) TB71 (10) Remove the screws fixing the P.B. holder. (11) Remove the relay P.C. board from the P.B. holder.	**Photo 3**  **Photo 4** 
3. Removing R.V. coil (1) Remove the cabinet and panels. (Refer to 1.) (2) Disconnect the following connector: <Inverter P.C. board> CN602 (R.V. coil) (3) Remove the R.V. coil.	

OPERATING PROCEDURE	PHOTOS
4. Removing the discharge temperature thermistor, defrost thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor (1) Remove the cabinet and panels. (Refer to 1.) (2) Disconnect the lead wire to the reactor and the following connectors: <Inverter P.C. board> CN671 (Defrost thermistor, discharge temperature thermistor and outdoor heart exchanger temperature thermistor) CN672 (Ambient temperature thermistor) (3) Pull out the discharge temperature thermistor from its holder. (Photo 7) (4) Pull out the defrost thermistor from its holder. (5) Pull out the outdoor heat exchanger temperature thermistor from its holder. (6) Pull out the ambient temperature thermistor from its holder.	**Photo 5** 
5. Removing outdoor fan motor (1) Remove the top panel, cabinet and service panel. (Refer to 1.) (2) Disconnect the following connectors: <Inverter P.C. board> CN931 and CN932 (Fan motor) (3) Remove the propeller fan. (4) Remove the screws fixing the fan motor. (5) Remove the fan motor.	**Photo 6**
6. Removing the compressor and 4-way valve (1) Remove the top panel, cabinet and service panel. (Refer to 1.) (2) Remove the back panel. (Refer to 1.) (3) Remove the inverter assembly. (Refer to 2.) (4) Recover gas from the refrigerant circuit. **NOTE:** Recover gas from the pipes until the pressure gauge shows 0 kg/cm^2 (0 MPa). (5) Detach the brazed part of the suction and the discharge pipe connected with compressor. (6) Remove the compressor nuts. (7) Remove the compressor. (8) Detach the brazed parts of 4-way valve and pipe. (Photo 4)	**Photo 7** 

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